The Builder.

Vol. XV.—No. 758.

CHALDEA is a land of mystery.* The interest with which the recent excavations at Nineveh, and the remains of its ancient temples and palaces, have been regarded, has been not a little enhanced by the still more recent researches and discoveries at Birs Nimrúd, or Babylon, Múgeyer or the Ur of the Chaldees, Warka, or the Erech of Nimrod, and other sites of ancient cities in Chaldea and Babylonia. From the frequent allusions to the three associated regions of Assyria, Babylonia, and Chaldea in the Bible, and from all that history, profane as well as sacred, discloses as to their ancient inhabitants, these researches and discoveries have conspired to render this district one of the most distinguished and most important, not only to ecclesiologists, but to archæologists in general, throughout the whole of the civilised world. To every believer in our sacred records, indeed, this is even hallowed ground. Here, as we think could easily be shown, was (perhaps mystically) located that "Paradise of God," which, according to the Revelations, *still exists* (though no longer *here*), with its "tree of life in the midst" thereof;† just as, in subsequent ages, that heavenly "Canaan," which was but another name for the Paradise of God, was figuratively located only a little farther to the westward, in Palestine, the land of the Philistines, and to inherit which "the father of the faithful" was "led, by the Spirit of the Lord," out of the very region of the primitive Paradise itself,—out of "Ur of the Chaldees," which, strangely enough, is now believed to have been a city, if not a land, of the dead.‡

That the Garden of Eden, according to the Bible, occupied (figuratively or literally), in antediluvian times, that very site which, after the Flood, was known as Chaldea, we think can easily be shown from a little consideration of the four rivers which united at this "Garden of the Lord,"—this "God's Acre;" two of these being "the great rivers" Euphrates and Hiddekel (or Tigris§), which do there unite; but our sole object in even hinting at such a conclusion *here*, is merely to indicate one of the chief of those sources of the peculiar interest with which we all regard the ancient Chaldea, Babylonia, and Assyria; as to the long-buried and forgotten architectural remains of which we simply intend to present to our readers a few particulars, gleaned from the very interesting volume lately written by Mr. Loftus, who has explored and excavated some of the more important of their vast and sand-covered "heaps."

One of the most extraordinary circumstances connected with the recent excavations in Chaldea is the discovery that the whole of this desolate region is thickly studded with *cities of the dead*, sepulchral temples, and mounds containing myriads of terra-cotta, slipper-shaped coffins,—a circumstance all the more remarkable that, in the associated land of Assyria not a single tomb has ever been found. The obvious conclusion deduced by the enterprising excavators to whom we are indebted for a knowledge of these circumstances is, that, in all probability, Chaldea was the ancient burial-ground of Assyria itself, whence the dead were floated down the Tigris, like another Nile, to this land of the departed and the shades of Assyrian life. There are cities of the dead in this very "land of spirits," and to this very day, to which "the faithful" of the Persian people are sent, after death, from all parts of the Persian empire, and even from India, there to be buried with their fathers, on ground consecrated to that end from time immemorial, in the "marshes of God," as much of the land of Chaldea is specially called. Such cities of the dead are Nedjef or Meshid Ali, and Kerbella, on the western or Chaldean border of the Euphrates. The remains of ancient cities of a similar order which have been recently uncovered, lie farther to the south. Múgeyer and Warka are the modern names of the most important of these; but indeed the whole region of Lower or Southern Chaldea abounds in sepulchral cities and temples, of immense extent. The enormous accumulation of human remains at Warka proves that *it* was a peculiarly sacred spot, and that it was so esteemed for many centuries.

"It is difficult," says Mr. Loftus, "to convey anything like a correct notion of the piles upon piles of human relics which there utterly astound the beholder. Excepting only the triangular space between the three principal ruins, the whole remainder of the platform, the whole space between the walls, and an unknown extent of desert beyond them, are everywhere filled with the bones and sepulchres of the dead. There is probably no other site in the world which can compare with Warka in this respect: even the tombs of ancient Thebes do not contain such an aggregate amount of mortality. From its foundation by Urukh until finally abandoned by the Parthians—a period of probably 2,500 years—Warka appears to have been a sacred burial-place!"

The relationship of Chaldea to Assyria in ancient times must therefore have been a very peculiar one. Can we not shed some little light upon that relationship by help of the sacred Scriptures? Though there is no passage that we can trace which clearly indicates that the Assyrians held Chaldea in the light of a sacred burial-ground, there is one that we have not seen quoted which does bespeak a peculiar relationship between Chaldea and Assyria, even apart from the fact that the Chaldeans seem to have been a priestly order of men in Assyria and Babylonia as well as Chaldea, whose duties were peculiarly spiritual and magical.*

"Behold the land of the Chaldeans! This people was not till *the Assyrian founded it* for them that dwell in the wilderness: they set up *the towers thereof*: they raised *the palaces thereof*: and he [the Assyrian] brought it to *ruin*."*

The Assyrians then did *found* or establish Chaldea as a nation or a people,—a peculiar people indeed, from amongst whom came forth the Chaldean father of that peculiar people the Jews,—a spiritual people, who, ascetic-like, dwelt in the wilderness, yet, mason-like, set up the towers thereof, and raised the palaces thereof, and whence, indeed, went Asshur forth, and builded Nineveh itself and many other cities,—a sacred, priestly, yet masonic brotherhood, mysteriously associated with the *dead* in their *coffins*, as also with *temples* and towers, in the midst of which this priestly race presided over the funeral rites performed around these sacred shrines of the Assyrian people. Strange it seems to be that this very people should have brought these, *their own* sacred temples and towers as it were, as well as this their own venerated priesthood or magi, to ruin: yet doubtless it must have been to the Assyrian, as the Bible tells us, that the wreck we now behold is to be ascribed. And perhaps after all this is not to be wondered at when we consider that the Chaldeans at length became, "a bitter and hasty nation," who "marched through the breadth of the land to possess the dwelling-places that were not theirs,"—that they became "terrible and dreadful,"—*demons indeed*,—who "came all for violence;"† and thus most justly came this violent tribe of military priests themselves to a violent end.

The ruins of Warka were at one time identified by Sir H. Rawlinson as the ancient Ur of the Chaldees, whence Abram the Chaldean migrated into Syria and Canaan, a valuable manuscript in his library determinately connecting the one with the other. During the excavations at Múgeyer, however, which was almost a neighbouring city to Warka, cylinders were found, upon which the name of "Hur" was inscribed; and since that event Sir Henry has regarded Múgeyer as the true Ur of the Chaldees, and Warka as the Erech of Nimrod. Mr. Loftus seems still to be inclined, notwithstanding the title of his book, to favour Sir H. Rawlinson's *first* idea, that Warka is Ur; or rather he is disposed to attribute the name Ur "to *a district* of the Chaldees, which included both the ruined sites of Warka and Múgeyer." And there is a reason for this, and perhaps for still more than this, of which neither Mr. Loftus nor Sir Henry Rawlinson appears to have taken cognizance. The word "Hur" is the root of the well-known word "hurra!" and of other forms of it, such as hri! hurri! hurraj! all of which, etymologists tell us, were exclamations originally denoting a vehement desire to go,—"to Paradise! to Paradise!" and were often shouted out in battle to imply contempt of DEATH and a vision of *bliss* beyond its awful precincts. "Hur" then meant "Paradise," and this very district of the dead was its

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* "Travels and Researches in Chaldea and Susiana; with an Account of Excavations at Warka, the Erech of Nimrod, and Shush, 'Shushan, the Palace' of Esther, in 1849-52." By W. K. Loftus, F.G.S. Nisbet and Co. 21, Berners-street, London. 1857.

† "To him that overcometh shall it be given to eat of the tree of life, which *is* in the midst of the Paradise of God."—Rev. ii. 7.

‡ Æneas was directed to Cumae, in Italy, as the region where *Hades*, the land of spirits of the heathen, was to be found. The reason why seems to have been, because at Cumae, in her *cave*, the Sibyl lay *entranced*,—a God-possessed *dead* body, the soul of which had departed this life for a time, and entered *the region of Spirits*. False religion being, at least to some extent, a daimoniacal SIMILITUDE of the true, it may thus have been because at one time, as in the case of Abram himself, and his father, Terah, the true "oracles of God" were manifested, in a distinguished manner, at the union of the Euphrates and the Tigris, that it is said the true Paradise of God stood *there*, as indeed it must have done wherever these oracles were manifested; for he in whom the "Spirit" or "the Holy Ghost" is manifested, is "*not* in the flesh, but in the Spirit," or is *dead* in the flesh, but *quickened* by the Spirit," and to be quickened by the Spirit is to be "caught up" into "Paradise:" hence our Lord at His "mystic passion," on the Cross, assured the thief that that night (when he became dead in the flesh, but quickened by the Spirit) he would be with him "in Paradise."

§ In a previous number (p. 411, note) we have given our reasons for this identification of the Hiddekel with the Tigris, which was anciently called the Daghele or Diglod, and is still known locally as the Dijil.

* It is a curious fact that the word Chaldean (according to Cruden) means *demon*, or *daimon*, a word implying one *dead* to ordinary life, and *possessed by a spirit*, whether good or evil, as in the "Waren," or daimoniacal possession, practised in India even at the present day. The Chaldeans, therefore,—who are spoken of in connection with the magicians and others of the "wise men" at Babylon, and who responded, both for themselves and for the magicians and sorcerers, &c. when Nebuchadnezzar insisted, rather unreasonably, not only that they should interpret his dream, but also recall it to his memory,—appear to have stood, in relation to the magicians, nearly as, in our own country, Kelly did to Dr. Dee; the "magician" being Dee, and Kelly being his "scrier," seer, or oracle, to whom, as the God-possessed, or Spirit-quickened, the magician or priest put questions, and from whom he received responses. These ideas will tend, we trust, to clear up some of that great obscurity which admittedly overshadows the name or title of "the Chaldeans" as a branch of the wise men or magi of ancient times; and of whom by no means disrespectful mention by the way, is made in the Bible,—at least of "the wisdom and knowledge" of those of Egypt, though excelled in their own line by Moses, as were those of Babylon by Daniel, the master of the magicians himself, "in whom was the spirit of the holy Gods," and who was hence named "Belteshazzar." The *residence* of the *Chaldeans* in *cities of the dead* is paralleled, even at the present day, in the instructions of Buddha to his disciples who desire to be translated out of "Pravritti," or the concretive or concentrative life that now is, into "Nirvritti" or "Nirvana," the dispersive or irradiative state of paradisical repose, in which the life of selfhood, or the life that now is, is dispersed, annihilated, or extinguished, like a fire put out at night. These disciples were ordered not to dwell, or at least to *sleep*, or *abide by night*, in any other cities than those of *the dead*, and not to clothe themselves except in cerements dragged from the tombs. In ancient times, too, we find Isaiah the prophet, speaking of those who "sacrifice in *gardens*, who remain among the *graves*, and *lodge in the monuments*." He also alludes to Jews who, in imitation of the heathen, went into the *tombs and temples of idols to sleep* there, and have dreams that might discover future events to them,—clear allusions these to just such characters as the Chaldeans seem to have at length become, however eminent, either as oracles, as priests, or as astronomers, they may previously have been.

* Isaiah, xxiii. 13. † Hab. i. 6.

accredited site! Well therefore might the name of "Hur" be found there. More than that, the word "Houri," which Mr. Loftus, by the way, inadvertently, and without the slightest idea of any allusion to Hur, to Paradise, or to Chaldea, but still most properly, spells "Huri," denotes an angel of Paradise; so that Hur and its Huris denoted Paradise and its angels or spirits.* The "Hari" of the Hindoos doubtless denotes much the same angelic or spiritual nature as the "Huri" of other eastern nations.† Even the "Haran" in which Abram's father, Terah, dwelt, would seem to have had something to do with the same interpretation as that of Hur. As for "Ur," we are told by Cruden and other commentators that words beginning or ending with this root denoted Light. Thus Uriel and Uriah meant "the Light of the Lord," and perhaps "Urukh" (the name of the builder both of Warka and of Múgeyer) meant much the same: thus too the "*Ur*im and thummim," by which "the *oracles* of God" were consulted, meant *light* and perfection; and according to all mystics, Christian or heathen, to be in Paradise, the divine abyss, divine spirit, or beatific vision, is to be resting or reposing, in death-like entrancement, "in the light," which too was a phrase well known in the ancient Eleuisinian mysteries, as it even is in the modern freemasonry, associated also as it there is with the "high noon" of midnight—the time of rest and refreshment—in bliss—"filled with the spirit" or "the midnight sun," as the divinity of the Eleuisinian mysteries was called, and who is no other than the sun of righteousness, the holy spirit of *rest* in glory, and the Lord himself of Paradise or the heavenly Jerusalem—Zion—and temple whose *sanctum sanctorum* "needs no candle neither light of the sun," since it is ever "in the light" of the holy Spirit of entrancing rest, or paradisical and death-like repose in bliss or glory.

Whether Warka or Múgeyer were the true Ur of the Chaldees, however, matters little to our present purpose. Warka appears to have been the city of the dead distinguished and patronised as such beyond all others as yet discovered. It is now, with its vicinity, one of the most consummate pictures of desolation, Mr. Loftus says, that can well be conceived. The very Arabs of the desert, with the exception of *one wild and strange tribe*, shun it as *the abode of evil spirits*, and none will dare to pass a single night upon the doleful spot.

The principal edifice or ruin, to some extent uncovered by Mr. Loftus, is called the Buwáríyya, and thence is visible an astonishing accumulation of mounds and ancient relics, surrounded by the traces of an earthen rampart. The principal or central ruin is that of a tower 200 feet square. A more interesting structure, however, is that called Wuswas, and contained in a spacious walled quadrangle, the eastern corner 840 feet from the central tower. This, like all the other buildings at Warka and Múgeyer, points with one corner to the true north, an arrangement which seems to have prevailed generally in Chaldean architecture. It was at the Wuswas ruin that Mr. Loftus chiefly excavated. The façade to which his attention was given, afforded what he regards as the first glimpse of Babylonian architecture,—although Sir Henry Rawlinson considers it of post Babylonian date. It exhibited, says Mr. Loftus, peculiarities so remarkable and *original*, as to pronounce at once its undoubted antiquity, and furnish a new page to the annals of architectural art. It measures 174 feet in length, and in some places 23 feet of the height remains. It has long been a question whether the column was employed by the Babylonians as an architectural embellishment. The Wuswas façade, our author thinks, settles this point beyond dispute. Upon the lower portion of the edifice are groups of seven half columns, repeated seven times, rude in structure, but built of moulded semi-circular bricks, securely bonded to the wall. There is neither cornice, capital, nor base. The groups of columns are separated by dentated recesses, or chasings, 7 inches deep. This chasing, he remarks, occurs in many other Chaldean ruins, and is regarded as a chief characteristic of Babylonian architectural ornamentation.

The walls of Wuswas are so thick, that it was for some time mistaken for a solid mass. At length, however, the interior was reached. Every chamber was filled with rubbish, and two of them were excavated, but they contained no sculpture. Neither, indeed, has anything of special interest been as yet found in this interior, except a valuable ring, got by a negro named Wuswas, from whom the ruin was named; but this ring Mr. Loftus did not see.

The preconceived idea on which Mr. Loftus founds his conclusion as to the *original* nature of the Wuswas ruin, namely, that a rude and simple arrangement, without much ornamentation, must necessarily, or at least probably, be a very early one, is by no means a safe idea; and in the present instance we feel much more inclined to agree with Sir H. Lawrence than with Mr. Loftus.

Near the central enclosure, a very interesting and curious example of decorative architecture was found in the fragmentary remains of an edifice like the Wuswas. This was part of a wall, 30 feet long, and faced with, or rather entirely composed of, terra-cotta cones imbedded in cement, of mud mixed with chopped straw. These cones were fixed horizontally, with their circular bases facing outwards. Some had been dipped in red and black colour, and were arranged in various ornamental patterns, such as diamonds, triangles, zigzags, and stripes, which are said to have had a remarkably pleasing effect. The wall which these cones ornamented consisted of a plane surface 14 feet 10 inches long, broken away for a short space in the centre, and projecting 1 foot 9 inches beyond a series of half-columns, arranged precisely as in the Wuswas façade side by side. In ancient Egyptian tombs, similar but much larger cones are found, with hieroglyphs stamped upon their bases, several specimens of which are in the British Museum.

"They are supposed," says Mr. Loftus, "to have a sepulchral character, and to have been let into the wall at the entrance of the tomb, although they have never been observed in that position. The hieroglyphs are probably the names of the deceased. No marks or inscriptions occur on these Warka cones, but there is every reason to suppose that they were in a similar manner connected with the burial of the dead. The ascertained fact, before noticed, that the site was a vast cemetery, is strong presumptive evidence in favour of this conclusion.

Cones of the same kind are of frequent occurrence upon the ruins of the great platform, sometimes firmly fixed together in strong white plaster or cement, but no other building was observed with them *in situ*. There is, however, little doubt that several might be discovered by largely excavating in the mounds. Similar cones are found in many other ruins of undoubted Babylonian age, which, unlike Warka, have escaped being built upon by succeeding races. Mr. Taylor discovered them plentifully, both at Múgeyer and Abú Shehreyn, at which latter place they occurred 10 inches in length, composed of limestone and marble, and sometimes with a rim round the edge filled with copper. They were, undoubtedly, much used as an architectural decoration in Lower Chaldæa, and always in connexion with sepulchral remains."

These cones remind one much not only of the cones in the hands of Egyptian and Assyrian priests, but of those used by the Buddhists of the present day, apparently as objects on which to fix the eye in that "contemplation" which forms so distinguished a religious duty in Thibet, China, and India. The "sanctifying instrument" called the dorje or tortché, and also used by the Buddhists, has conical extremities, and a very similar instrument appears in each hand of a human figure moulded in terra-cotta, as if in a coffin, or a vesica piscis, and engraved in Mr. Loftus's book: he calls these instruments maces.

Warka, says our author, is a complete mine for extraordinary and unheard-of modes of decoration in architecture. Within a stone's throw of the south-west façade of Wuswas, he found a curious building somewhat resembling the cone-brick structure, but formed of conical vases, mouths outwards, which produce a strange effect.

But the locality at Warka which furnished the most valuable and interesting fruits of research, was a small detached mound 40 feet high, situated about half a mile south-east of the central ruin. Here a chamber was discovered measuring 40 feet long and 28 feet wide, the mud walls of which stood only 4 feet high, and had been covered with coloured plaster.

"It was a perfect museum of architectural scraps, of a highly instructive and curious character. The unbaked brick floor was literally piled with broken columns, capitals, cornices, and innumerable relics of rich internal decoration, which exhibited undoubted symptoms of Greek and Roman influence on Oriental taste. The smaller objects were wholly plaster; but the larger consisted of moulded bricks, thinly coated with white plaster: many of them were fantastically coloured.

Three of the capitals are Ionic; but the proportions of the volutes and other members are peculiar. A fourth description of small capital has peculiarities of its own, suggestive of the later Byzantine style. A large and elegant leaf rises from the necking, and bends under each corner of the abacus. Springing from behind a smaller curled leaf in the centre is the bust of a human figure, wearing the same preposterous head-dress which is characteristic of the slipper coffins and Parthian coins.

No columns were discovered to correspond with the larger capitals; but the walls were liberally adorned with small Ionic half-columns, with half-smooth, half-fluted shafts, which were highly coloured. The lower and smooth surfaces were diagonally striped with red, green, yellow, and black; the flutes being painted black, red, and yellow alternately, while the level ridges between them are left white. In some cases the flutes were quartered with the same colours.

Among the *débris* of smaller articles were bases of columns,—friezes, with bunches of grapes alternating with leaves,—gradines, resembling those on the castles of the Nineveh *bas-reliefs*, but ornamented at the base with a conspicuous six-rayed star in a circle,—fragments of open screen-work, with complicated geometric designs of different patterns on the opposite sides (these are very peculiar, and differ materially from the arabesque),—and flakes of painted plaster from the walls, with fragments of small statuettes, coloured, and sometimes gilded. * * *

It has long been a disputed question whence originated the germs of Saracenic architecture; but the prevalent opinion is that the Moslems, having no style of their own, adopted those which they found practised in the countries whither they carried their conquests, more especially the Byzantine. It is, nevertheless, remarkable that the same uniformity in richly-wrought tracery and geometric ornamentation prevails from India to Spain in Saracenic structures, which could only have arisen from a central point.

May we not suppose that the peculiarities of Saracenic architecture are due to a much earlier period, and that they originated with the Parthians, who succeeded the Greeks in the possession of Mesopotamia? Of this race we have, unfortunately, scarcely any memorials left."

Amongst various other interesting remains found at Warka and Sinkara, were moulded bricks in spiral columns and coronet-like capitals. Serpentine and clay tablets were also found, and numerous small terra-cotta figures, jars, and jugs, from the coffin mounds, as also trinkets, clay seals, lamps, and lachrymatories.

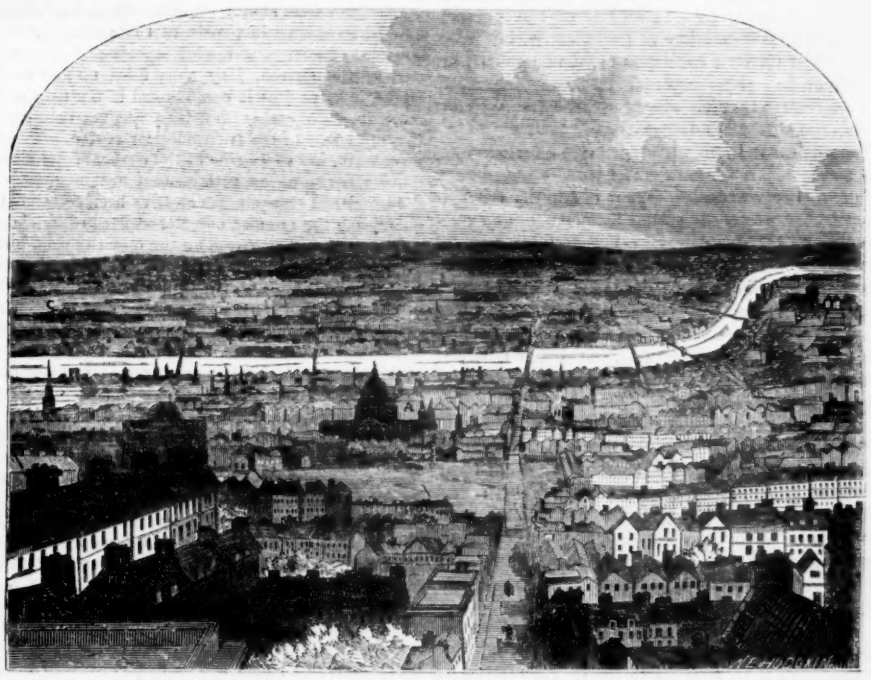
The researches of Mr. Loftus and Sir F. W. Williams of Kars at Susan, the Palace, where columns and other valuables were found, are also highly interesting, but our space is now fully exhausted, and all we can do is to recommend our readers to purchase for themselves Mr. Loftus's volume, which they will find to be well worthy of perusal, though not very skilfully put together.

* Angels "*are* all ministering *spirits*, sent forth to minister for them who shall be heirs of salvation."—Heb. i. 14.

† "Heri," in Sanscrit, means Saviour, and "Harita," with the Brahmins, denotes "the visible tree of the universe, *the abode of perfection*,"—which, in fact, is the Paradise of God,—a tree,—and, like Jonah's gourd *at Nineveh*, an "abode,"—which is "seen" in a "grove," or garden, by "the holy sage (or Magus) who is *free* from all bonds, and *perfect* in abstraction." Has not this something to do with "the tree of life which is in the Paradise of God,"—the true "abode of perfection," and with the sacred tree of the Assyrian or *Ninevite* sculptures, *to* which the priests, magi, or holy sages, offer up the cones which they hold in their hands? Mr. Loftus alludes to this tree as "the Deity in the form of the sacred tree." The offering up of the cone, if, like the Buddhist cones, it was used as an outward object of, or aid to, contemplation or contemplative abstraction, would well imply that "the holy sage" was "perfect" in that "abstraction," by means of which the soul was freed from the bonds of the earthly life, and "plunged into the divine abyss," or, in fact, *translated*, by entrancement, into Paradise,—the divine "abode of perfection." Such words as *Hier*ophant, *Hier*opolis, and even *Hier*osolyma or Jerusalem, seem all to belong to those having *Hur* as their root, and all bore allusion to *Light* and a *Sun*, as it appears Ur itself did.

TWO ASPECTS OF LONDON.

"Look on this Picture"



"And on this."

TWO ASPECTS OF LONDON.

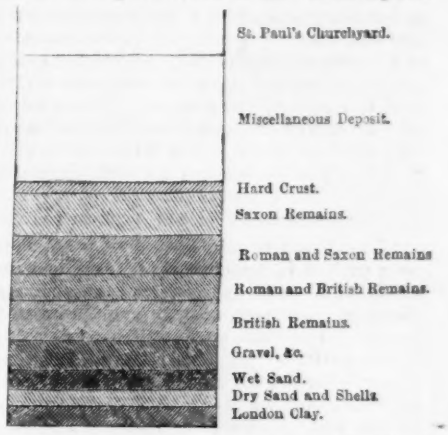
Notwithstanding the examples of the mighty Babylon, Nineveh, "Eternal Rome," and other famed cities of antiquity, we look forward with firm hope to the splendid future of London. This metropolis is, in our sight, growing in wealth, strength, and population. The dwellings of the poor are giving way to better buildings; and, ere a score of years are passed, it is probable that the sad condition of things which has been illustrated in these pages will have ceased to exist. Year after year the London houses are assuming a more important appearance,—a circumstance which may be readily proved by an examination of a few of the streets of various classes, built thirty or forty years ago. The warehouses in the City, the banks and other offices, are in many instances towering above their former height, and, instead of dingy flat brickwork, now present fronts of massive stonework and elaborated design. Our public structures are in like manner increasing in substance and extent: wise and kindly-intended institutions are springing into use: these and other indications of healthy progress assure us that London is but approaching its prime strength, and that it will, as it has done for the last thousand years, continue to progress for long to come.

If the present condition of London is wonderful, its future hopeful, its rise and progress in ancient times have also an interest, which is rendered the more intense in consequence of the indistinct and dreamy records of the past.

We have before, on more than one occasion, referred briefly to the rise of London and to the surprising extent of ground which has, in the surrounding neighbourhood, been saved from marsh and water. In parts along Thames-street, which, in the days of Roman occupation, was the boundary of the Thames, we have noted the timber, piles, &c. which were used as a foundation for the houses of the conquerors, and as a means of saving land from the river.

This is old work, but in our days the same process may be seen going forward in the ship-building yards near the docks and elsewhere. We would, however, ask our readers to go with us back to a more remote period than that above mentioned—to a time when all the space which is now so thickly covered with vast works, and occupied with living multitudes—was a watery waste as desolate as the neighbourhood of Babylon at the present day. Standing on a high part of Clerkenwell or Islington, it is easy to imagine the picture;—a foreground of sedges, reeds, and willows, and a sloping bank towards the Fleet river; then a stream of considerable magnitude. On the south, east, and west a space of water extends to the base of the higher lands, presenting the appearance of a large lake in which the channel of the Thames is not even defined. In the midst of the waters there may, however, be traced three portions of land which have risen by gradual degrees above the water: that nearest at hand is the site of the present city, the highest part of which is near St. Paul's. The little island to the right, B, has now grown into Westminster, and that to the left, C, is now occupied by Kent-street in the Borough—a spot on which many Roman and other remains have been discovered.

It is most interesting to wander in the various districts of London, and trace the evidence of the decrease of the water and the rise of the land. Sir Christopher Wren, at the time of excavating for the foundation of the present St. Paul's, made careful examination of the various layers of soil from the surface of his day to the bed of the London clay, and enables us to give a sketch of the various deposits.



Covering the London clay, the famous architect found shells, fine sand, and other indications which show the rise of the site until it presented somewhat the same appearance as the large shoals do which are still in course of formation in the Thames. Then come various other matters, and eventually evidences of the occupation and raised surface by man. Then appear the remains of different people, and marks of fire and buildings, which form a suggestive model of London's history.

By watching the numerous excavations which are being made from time to time, by a careful examination of different localities, and from the accounts of different writers, we gather distinct evidence of the truthfulness of our old picture.

It seems evident that London, or by whatever name the city was then known, had assumed considerable consequence before the erection of the river embankment—that great and mysterious work,—for it is not reasonable to suppose that what may be called the formation of the river would be undertaken without a very express purpose; and when we think of the extent of that work, and consider that so little is known of its origin, we cannot but contrast it with some of the trifling improvements of recent times.

After the embankment of the Thames, a considerable portion of what was once the lake must have been rendered comparatively dry. The city spread, but still extensive districts were flooded by every tide; even less than a century ago a part of Lambeth was daily under water; and eastward there were great marshes which were considered not worth cultivation. These undrained spaces had evidently an injurious effect on the health of London, and ague and some of the fevers peculiar to the Fens were common in the metropolis; but these have now disappeared, except in a few cases where they have been introduced from damp districts.

In order to give a more clear idea of the contrast of the past with the present, we annex a slight sketch of the same scene from one of the tall houses now built on the banks of the Fleet, near Bagnigge-wells. The view of St. Paul's from here is very fine, and it will be a matter for future regret that the opportunity afforded by the late improvements in this valley has not been taken advantage of to open a direct line to the Cathedral.

Frames for Architectural Photographs.—Have a good wide margin of white cardboard, glaze with patent plate glass, and let the frame be of *dead* gold a *quarter of an inch* wide. This, I think, will please your correspondent.—G. T.

STATEMENT BY MR. COCKERELL, R.A. ON THE WELLINGTON MONUMENT COMPETITION.

Mr. Editor,—I have to acknowledge and to thank you for the interpretation you have been pleased to put upon my retirement from the adjudication of the prizes in the fine art competition for the Wellington monument, which, as you justly suggest, was grounded, first, on my doubts as to my own competency, though a well-known amateur of sculpture, to give judgment on an art not professionally my own; and, secondly, on my doubts as to the efficiency of a tribunal, on a technical and professional subject, without the aid of technical and professional counsel, so as to give satisfaction to the artists concerned and to the public generally,—for my isolated appointment on that commission cannot fairly be urged as supplying the professional element.

At the same time, as you have inferred, I deemed it my duty to the occasion, to my office as surveyor to St. Paul's Cathedral during more than thirty-two years, and as the original suggestor of the site adopted for the erection of that national monument, to offer every service and advice in my power to the commissioners in that character, with reference to the harmonies of the cathedral architecture and of the special locality, though I gave no judgment on the relative merits of the designs. These scruples were submitted to my distinguished colleagues with all the zeal and loyalty I owe to the cause of art, and were listened to with the utmost candour; but circumstances preventing their acting upon them, I deemed it my duty to retire.

Of the imitative arts, the plastic is surely the most exalted in its conception, style, and composition: it ranks as the epic of those imaginative arts. Abstract, and grave, and rare in its genius, it exercises no less those rare qualities in the critic, far different from those he may bring to bear on the more popular art of painting. Enduring, like the architecture to which it is attached, it should be Catholic and of all times, harmonizing with its proportions, aiding its scale, and incorporated with its features.

The appropriateness of the symbols and the images amongst the many which present themselves in the illustration of the character and history of the great personage to be commemorated; the paucity of space, after all, to give expression and emphasis to the most important of these; the doing justice to those who have best contributed to these conclusions, by their thoughts and designs, and who so have led us to a juster estimate of the object to which we hope to arrive ultimately, is a delicate matter, on which we cannot be too scrupulous and deliberate. To aid in these, we want the counsels of the historical painter, the architect, the master of scenery, the learned sculptor,—no less than of the poet, the man of letters, the tasteful patron, and the accomplished man of the world. In these last the commission abounded: it was in the first that I could not but esteem that we were deficient; and it is certain that light can come only from the free discussion and interchange of thoughts amongst such persons as these.

The success of the system of competition depends primarily on the constitution of the tribunal appointed for the adjudication. This is the grand assurance of the integrity and the competency of the award, not only as doing exact justice to the public as respects the great object of the competition, but to the relative claims of those who have contributed their genius, experience, and expense towards that object. Without these secure foundations, the whole fabric falls to the ground, and our labours are fruitless and utterly abortive; adventurers alone will enter the chance medley; the ostentatious clap-trap takes the place of the soundness of design; fashion prevails over the permanent principles of art; true taste is put to flight; and experience, ever modest and real, shrinks from a tribunal in which it will be scarcely heard, much less valued, in the face of garish and attractive pretensions. The veteran declines to expose himself to the mortification and the injustice of a low standard of criticism: the public thus lose the advantage of long labour and devout studies: new names alone appear on the list of candidates, and the celebrities disappear from these most generous and interesting occasions: disgust and dissatisfaction generally follow.

Our illustrious neighbours in France largely practise the system of competition in the matters of fine art. Their tribunals are by a mixed commission. As with us, the leaders are selected from amongst the most distinguished and responsible public characters, understood to be *dilettanti* and amateurs; but they do not stop there, as we have done: they call in a large proportion of professional and technical members, reputed in their several academies;—lastly, men of literature and science, whose studies bear more or less on the subject of fine art. All these vote and discuss in perfect equality, as members of the tribunal.

The deference to scientific and artistic opinion, in a country where these qualifications are supreme, is carried to great lengths, and presents a remarkable contrast to our own, and the English members of the juries in Paris, 1855, were scandalized by the regulation which admitted into the juries the most distinguished competitors, who thus became judges in their own cause; and this was avowed by those who appointed them as necessary to guide the judgment of the leaders and less cultivated members of the jury. In Rome this principle is carried even further: with them the adage holds still, "Cuique in suâ arte credendum est." The sculptor does not admit the painter to the award, nor *vice versâ*, much less the *dilettanti*, and the amateur.

But what shall we say of the practice of this country, in which gentlemen, patrons, *dilettanti*, and scholars alone are the judges? gentlemen, indeed, of whom we are justly proud, and to whom we defer as guarantees of the perfect honour and impartiality of the awards, but who from their loftier avocations must necessarily be deficient in the professional and technical considerations which are of scarcely secondary importance in the adjudication.

Sir, it must be felt by every one as degrading to our arts, to be subjected to the judgments alone of the *dilettanti*, and it is equally derogatory to the professor gifted by nature, and cultivated by the devotion of a life, to be dispensed with on these occasions of competition, and to have his judgment set aside as of no advantage and sometimes suspected. It is incomprehensible that in enlightened England, the determination of those professional merits, on great national occasions, by a committee of taste alone, should still hold amongst us.

None of us will deny the great respect and weight due to those high public characters, and our perfect satisfaction in the soundness of their leadership in competitions of all kinds; but their eminence in their special vocations cannot constitute them the all-sufficient judges of matters technical and professional; nor do they allow themselves this pretension in any other than questions of taste.

The profession of æsthetics is not to be treated as so light a matter when the glory and good repute of a country is in question, and when we are preparing to hand down to posterity a specimen of the understanding of this day in these matters. The very large sum proposed to be expended is not enough to purchase the wit and the taste required, much less is it necessary where these qualities can be found by a cheaper and more liberal method, a grave and enlightened discussion and criticism, with leisure and with learning, assisted by men of art and of thoughts in these higher departments.

All these considerations, as I have already said, I urged very respectfully on my distinguished colleagues, and I trust that the words of their report will sufficiently exhibit the candour with which they were received, as neither captious nor unfounded. Let us look to a future more enlightened practice in this particular, and I urge you, Mr. Editor, and the friends of true liberality, to enforce views which can alone lead to a right judgment in these glorious fine arts, and which have the sanction of all classical history, and especially of our illustrious neighbours on the Continent.

I cannot refrain from rejoicing with you at this moment in the unexampled liberality of those authorities who have originated these memorable competitions, to which I believe no instances of equal splendour can be cited in history, in respect of occasion and subject, impartiality, public exhibition, and the splendour of the rewards held out to genius, both in honour and in pecuniary compensation. It would be lamentable indeed, that such generous and enlightened efforts should fail to attain their great results, which results we are all of us bound, at whatever cost of private feeling, to promote by every fair argument. I grieve that a principle which I hold as loyal to my profession should have prevented my co-operation with the distinguished commission amongst whom I had the honour to be associated in this last particular of adjudication, and to have appeared to offer any objection to the generous course of Government in favour of those fine arts which are so calculated to promote the honour and advantage of the country, and in which we all so heartily rejoice.—I have the honour to be, Mr. Editor, your most obedient humble servant, C. R. Cockerell.

THE WILTSHIRE ARCHÆOLOGICAL SOCIETY AT BRADFORD.

Bradford, in Wiltshire, where the annual meeting of the Wiltshire Archæological and Natural History Society was held on the 11th, 12th, and 13th inst. is a picturesque and interesting town, and has a sufficient number of antiquities in and around it to fit it for such a meeting. The church, the free-school, the ancient barn, the bridge with what some antiquaries call a chapel on it, the "Duke's House," and many remnants of early domestic architecture discernible in the streets well deserve examination. Some of the views of the town, with houses and factories built on the hill-side and surrounded by trees, are very charming. The parish church gives the evidence of shallow flat buttresses against part of the chancel, and an apparent semicircular-headed opening in the same part of the church, long since filled up and whitewashed over;— that it was founded in the time of the Norman, if not earlier; but the present structure is for the most part of the Perpendicular period. There is a recess on the south side of the chancel belonging to quite the end of the 14th century, ornamented with pinnacles and crockets, which have been restored, and containing the remains of a cross-legged effigy. There is a corresponding recess on the opposite side, but of plainer character. A hagioscope is formed to the extent of many feet through the north wall: the rood-loft has left its marks, and the chancel arch was once elaborately painted. A straight-headed panelled and ornamented recess in the north wall of the nave aisle, which once contained a crucifix and was decorated with colours, is peculiar. It is probably simply a tabernacle, but the pews which now shroud the lower part of it should be cleared away, so that it might be examined. One of the Perpendicular windows on the south side of the nave with a traceried transom is particularly good.

Within the free-school near the east end of the church will be found portions of a building displaying some of the characteristics attributed to work executed before the Conquest,—Saxon in short. The semicircular head of the doorway springs from an impost: the opening is wider at the floor than at the springing, while in another part of the building the pilaster-like arrangement of stones known in pre-Norman work is detectible.

The town was all alive, and had set itself to work to show it appreciated the visit of the society. Wreaths of evergreens spanned the streets, banners fluttered here and there, and one enthusiastic small tradesman, hight Howell, had decorated the front of his house with an inscription formed in roses and dahlias, which read "Prosperity to the Archæological Society." The opening meeting was held at the Town-hall, a new building erected at some cost from the designs of Mr. Fuller, an architect, lately of Bath. It is of a mixed style, scarcely Elizabethan, and the lower part, where Gothic forms more strikingly prevail, is much better than the upper. The Rev. J. H. Bradney, who filled the presidential chair, and delivered the opening address, pointed out that while a "paper" must be strictly confined to the subject of which it treats, an address may be loose and rambling; and he certainly fully availed himself of the privilege,—flitting from Cicero to the Commissariat, and from the Old Testament to Tom Paine's bones. However, it was done with good humour, and one could discover a sound stratum underneath. The allusion to Cicero was to show his love for antiquity. When the province of Sicily, said the president, was assigned to Cicero, he made his excursions through the island to see everything in it that was worth seeing. In the course of his tour he comes to Syracuse—and there he has a particular object in view—he wants to see the tomb of Archi-

medes, for in the course of his studies he had read that that great geometrician was buried there, and that on his tomb a sphere and cylinder (emblematic of his pursuits) were engraven, and also some verses inscribed, and he was determined to verify the fact by actual inspection. He questions the great men of Syracuse, the magistrates, upon it, and to his surprise they can give him no information about it. They conduct him, however, to the gate of the city, where stood the greatest number of their old sepulchres, and there he observed, in a spot overgrown with shrubs and briars, a small column—a columella he calls it—whose head just peeped above the bushes; and just fancy his delight: he sees the figures of the sphere and the cylinder upon it! And then he goes to work with a zeal and energy which could not be surpassed even by a member of the Wiltshire Archæological Society; and at length he has the satisfaction of finding the verses inscribed on its base, and afterwards of indulging in a little of that boasting which was one of his weaknesses.

In the committee's report, which was read by the Rev. W. C. Lukis, one of the honorary secretaries, feeling reference was made to the death of Mr. Britton, a member of the society.

"Mr. Britton was personally known to you," continued the report, "and it is scarcely necessary for your committee to remind you of, for you will yourselves recollect, the very active part which, notwithstanding his great age, he has taken at each of these our annual meetings; not only attending himself, and always with a paper in his pocket, to be read if occasion required, but using all his powers to stir up others to a like activity in the cause. His energy and animation on those occasions will long remain impressed on our memories. There was a kind of youthful elasticity and playfulness about him, even at our general meeting at Warminster last year, only a few months before his decease, which gave us a hope that he would have been spared for some years longer. Moreover, it is not too much to state that, but for his indefatigable exertions in the cause of archæology in his native county, this society would not have existed. In addition to the admirable sketch of his life, which appeared in the last number of our Magazine, and a very excellent portrait of him, which will appear in the forthcoming number, our society is collecting subscriptions from its members and others towards erecting a memorial in the church of his native parish, Kington St. Michael, and also for providing a small annuity for his widow, to either or both of which your committee would recommend your subscriptions. We may add that the Institute of British Architects also contemplate placing a monumental memorial (we believed an incised brass) in Salisbury Cathedral."

The Rev. W. H. Jones, Vicar of Bradford, then read an interesting paper on the "History of Bradford," stating, amongst other things—first,—That the Romans began to visit this locality about seventy or eighty years after the final subjugation of Britain by Claudius, A.D. 62; that the period when they were most numerous here was from about A.D. 250 to within some thirty years of their leaving Britain altogether; and that, at that period (say about the *end* of the fourth century) they began to leave the immediate neighbourhood. Second,—That as most of the coins have been found in the upper part of the town, in what is now called Budbury, *there* was the Roman settlement. This spot, situated at the top of a hill, almost inaccessible at that time on the south or west, was just such a one as we should, from the customs of the Romans, have expected them to select, and it was the nearest point to Bath, in which place we know they clustered in great numbers. In clearing out a well, a few years ago, he understood that large numbers of short swords, a ring, and other things were discovered; but he had never seen any of them, nor heard so exact a description of them as to enable a correct judgment to be formed as to their age. In the same field there is still the appearance of earthworks, which, a few years ago, were distinctly traceable on some of the adjoining pieces of ground, before they were partitioned off as gardens and fields, and then levelled. The common name that is given to the field is the "Bed and Bolster," which, if the hypothesis be true, may be a homely, but certainly not altogether an inexpressive description of the *vallum* and its corresponding *agger* in a Roman encampment.

Aldhelm built a monastery at Bradford. Mr. Jones said,—The site was most probably near to the north-east end of the present church, a spot of ground there still bearing the name of the Abbey Yard. Perhaps a portion of what now is the Charity or Free School [of which we have spoken] formed part of the Old Monastery, for you can see at a glance, that what is now the entrance to the school is a modern addition to some more ancient building. That small arcade of semicircular arches which you may observe in the south wall (though it may have possibly been built in comparatively modern times), does not look unlike a memorial of what the Old Anglo-Saxon Monastery may have been. An examination of the interior of the building, a short time ago, revealed the fragment of an arch, a large portion of which had been cut away, and which may have been the entrance to some large hall, or, perhaps, chapel. The two antique figures of angels which are now fixed above the present entrance to the schoolhouse may fairly be deemed ecclesiastical decorations. They were found imbedded in the wall at the upper part of this arch that I have just alluded to, one on either side, the whole of the central part of the arch having been cut away for the purpose of introducing a large stack of chimneys. There may have been originally a central subject, which, together with the figures of angels, formed the ornament of the tympanum of the doorway leading to some building, the purpose of which can only now be a subject of conjecture.

Of the "chapel" on the bridge, Mr. Jones said,—"Leland, who visited our town in 1540, speaks of the bridge, which, he says, had nine arches of stone, but does not allude to the chapel. There have been some who have thought that it was merely a tollhouse for the collection of Pontagium—a contribution for maintaining and re-edifying a bridge. Aubrey, however (who wrote 200 years ago), says expressly, 'Here is a strong and handsome bridge in the midst of which is a little chapel, as at Bath, for masse.' So that no doubt its object was to contain the image of the patron saint, and to receive at once the devotions and alms of passers-by, the latter being probably given to the support of the hospital at the bridge-foot. Murray, in his hand-book, calls it St. Lawrence's Chapel, upon what authority I know not. I have endeavoured, as yet in vain, to ascertain the truth in this matter. The Bridge Chapel at Bath was dedicated to St. Catharine. As Murray goes on, in his account of Bradford, to tell us that by the Reform Bill we acquired the right of sending two members to Parliament, and yet adds immediately that Bradford has slender claims to historic notice, I fear that we can expect but slender justice from such a chronicler, and I, for one, am not much inclined to pin my faith to him in his assertion concerning the dedication of our Bridge Chapel." The growth of the town through the wool trade—for, as Leland writes, "The town of Bradford standeth by clooth making,"—was of course traced and illustrated, but we have not space to pursue it. Suffice it that the Vicar's paper gave great pleasure to the meeting.

To this followed a paper by Mr. Matcham, on the bearing of the antiquities of Malta on the history of Stonehenge. Views of structures brought to light in Malta, were exhibited to show their likeness to Stonehenge, and other similar monuments. There could be no reasonable doubt, he thought, as to the nation which erected these structures, for, independently of the tradition of the Maltese, Diodorus Siculus writes, "Melita (Malta) is a colony of the Phœnicians, who, after they had extended their mercantile adventures even to the western ocean, had a place of safety in this island on account of the commodiousness of its ports and its harbour in a deep sea." Indeed, we might conclude that the name itself, though said by classic writers to be derived from the nymph Melita, or from the greek μελι or honey (which is not a product of the island), is no other than the Phœnician word Melita, a place of refuge or sanctuary. The Carthaginians, their successors, "Tyrii coluere coloni," possessed Malta 402 years before our era. From the superior antiquity and earlier civilization of these nations, we might, therefore, safely conclude that the Haglar Chem and the Maneidra were temples erected in honour of the national religion of Phœnicia for the celebration of these rites which it prescribed; although (as in similar cases) heroes and sovereigns sometimes received sepulture within their walls. Monuments of this description still remain on the Phœnician coast, and have been noticed by a late traveller in that country. Mr. Matcham continued,—The five lofty trilithons which form the ellipse of that edifice, and which he had elsewhere endeavoured to show were dedicated to the five intercalary days and their presiding deities, were doubtless to be ascribed to the same founders. In its completion and ulterior destination, he believed that a great solar temple, dedicated to the Phœnician Hercules, or the sun, might be contemplated on Stonehenge: the triliths, whilst representing the three principal deities of Samothrace, also indicating the same Hercules—the Her-cul—universal light—the Melcartus, the discoverer of British tin; who, as we learn from Sammes, is represented by the heathen hierographers as looking through chinks or crevices, with this motto, "Omnia videns,"—all seeing. Nor is it improbable that the Haglar Chem was dedicated to the same deity, and that the various configurations of the great luminary, and the apparent courses of the heavenly bodies might hereafter be discerned, in its intricate conformation, "a mighty maze, and not without a plan."

At the dinner which followed the meeting, and whereat Mr. Sotheron Estcourt, M.P. presided, and did his "spiriting" very pleasantly and ably, this paper led to a passage of arms. The chairman, in the course of the evening, said Mr. Matcham had reversed what he had always considered the current of history: "He has put so much doubt into my mind," went on the chairman, "that whereas I always thought that the farthest point of my pedigree was hidden amongst the Saxons, I am half inclined now to think I have got Phœnician blood in my veins. Of course I am not presumptuous enough to suppose there is any relationship between myself and the great Hannibal. I am content simply with being told, that whereas you, Mr. Estcourt, have always supposed that your ancestor was either a Norman or a Saxon,—be it known, if you have fancied anything of this kind, you are utterly wrong; Stonehenge is a proof that you have Phœnician blood in your veins; you come originally from Carthage, and most likely it was some relation of yours that originally started from Tyre and Sidon with Queen Dido." And so he drank Mr. Matcham's health. And then that gentleman, in a tone which made people believe that he did not exactly like the banter, admitted the possibility of Mr. Estcourt's descent from Hannibal; and, as the latter gentleman is a captain in the Wiltshire Yeomanry Cavalry, congratulated the regiment on having such noble military blood in its ranks.

At a *conversazione*, held after the dinner, a paper on Avebury, by Mr. William Long of Bath, was read, and one on Mediæval Houses in Wilts, by Mr. Parker; after, which, the Rev. J. Wilkinson sketched out the next day's excursion. When the morning came, Mr. Wilkinson headed the party, and performed prodigies of horsemanship in the meritorious endeavour to keep them to their time and enable them to get through the work. Of what was seen, however, we must speak in another number. Right glorious were the woods that day, and many recollected that

"The groves were God's first temples."

THE WELLINGTON MONUMENT IN ST. PAUL'S.

I HAVE read with much pleasure the excellent remarks on this subject in your last week's number. The interest you take in the subject may induce you to insert the following.

All that was mortal of our two great naval and military heroes, who, at the commencement of this century, turned back the tide of war from these shores,—Nelson and Wellington,—now rest side by side in the crypt beneath the dome of St. Paul's. Memory will ever connect them together, especially in St. Paul's. Does not good judgment point to their historic parity being emphasised in marble as well as in the page of history? Monuments are the emblems of history, and sculpture unites with the chisel as literature with the pen. The monument of Nelson, from the hand of Flaxman, exists on one side of the entrance to the choir in St. Paul's. Does not taste indicate that of Wellington to occupy the opposite place? That of Cornwallis now fills the space, but he whom it records is not buried beneath it, and why might it not be removed to a corresponding site on the west side of the dome?

At any rate, and under all aspects, this would be the *popular* spot for the monument to Wellington; but it is the more evidently judicious now, inasmuch as the sculptural resources of this country and Europe have been called on to produce a design for the memorial suitable to the place that was proposed in the conditions of the competition, namely, the open arch between the nave and aisle to the north-west of the dome. Eighty-three models were sent in, and not one is recommended to be carried out. Is this the fault of the sculptors? Not so. There were many beautiful things there, but the choice of the site was incorrect, and no treatment of it can be satisfactory.

The truth was, the amount of the sum suggested has, from the first, embarrassed the whole affair: 20,000*l.* were felt to be too much to expend in any situation akin to those already occupied by the memorials of Cornwallis, Nelson, &c.; and so a new kind of site was indicated, which was deemed to afford scope for the expenditure, and thus a place was chosen in the cathedral, which Sir Christopher Wren would, in my belief, never have sanctioned for the purpose. That great architect left spaces on the solids of the cathedral to be duly embellished, but not the spaces of his noble arches, &c. to be tampered with and filled up, so as to intercept the vistas of his magnificent structure. There were three marked ways, as evidenced by the eighty-three models, in which this open space was liable to be treated by the different artists. *Firstly*, the treating the whole arch as the field (like a niche), not to be filled up of course, but to be *treated; secondly*, that only the square

beneath the springings was to be treated; and, *thirdly*, making the monument *pervious*. Of these three the last is the best for the architecture, but the worse for the monument, for there is a great window at the back (in the wall of the aisle), and even if the glass of this were painted (which certainly might do some good), still everything in the way of statues would look black against it, and be seen most indistinctly. The same defect would rest with a low monument, and a high one would block up the space too much. A monument should be a solid substantial work, but any solid substantial work would be *in the way* in the space; and a *pervious* one, or a low one, would have but a mean effect, and would be wretchedly lighted. Thus, therefore, in this case, either the architecture or sculpture must be sacrificed, and that to the tune of 20,000*l.*!

The public must take care that they are not visited again by another great botch like the Nelson column, which was also regulated by noble lords, and not by those specially fitted to arbitrate in such matters. The authorities, in putting forth the conditions for the Wellington monument, do not appear to have known whether the arch were a fitting place or no, at least if we are to take the conditions and the report of awards together. The eighty-three models pretty well illustrate that the arch is not a fitting place. Surely it is not too late to choose another? If the monument to Wellington be eventually made to pair with that of Nelson, something under 10,000*l.* will be sufficient for the work (few of the memorials already erected in St. Paul's have exceeded 5,000*l.*) and the embarrassing 20,000*l.* might be split into two manageable amounts, and what is not required for the St. Paul's monument might be applied to some open air one, worthy of the duke, say near the Horse Guards. EPSILON.

THE AWARD ON THE WELLINGTON MONUMENT DESIGNS.

Now that the committee appointed to adjudicate upon the Wellington models have returned their verdict, it cannot fail to strike the public as a singular act of injustice, not to say *mala fides*, towards the unsuccessful exhibitors, to find, from the express avowal of the committee themselves, that their selections have been made wholly irrespective of the suitability of the models chosen to the *locus* and position which the Wellington monument is intended to occupy. Surely the committee must have been aware of the terms upon which public competition was originally invited. These terms were announced beforehand, and had especial reference to the site of the monument and the character of the edifice in which it was to be erected. Now the circumstance that these conditions were not only lost sight of, but virtually and ostensibly ignored, was calculated in the highest degree to prejudice the success of those candidates who had executed their designs with special regard to the particular locality indicated to them by the First Commissioner of Public Works. Hence the injustice. Again, if the models selected will not subserve the contemplated purpose, what are they good for? Nay, the fitness of the judges in such a case may well be questioned, if they are unable (as they say they are) to decide whether the models are suited to the locality or not.

There is then, I conceive, good cause for a protest (if indeed such a protest could avail much) on the part of the profession against the principle on which the committee made their selection, in leaving out of view some important conditions of the problem—conditions, too, which had an evident and predominating influence over many of the works of art which are now exhibited at Westminster Hall. But what should be done in such a case? It would seem that those who are at the head of the profession should speak out—if not for themselves, at least for others. Of course such men as Gibson can afford to treat such matters with indifference. But why does not Mr. Bell (Nos. 57 and 60) declare his mind? Surely *he* has some reason to be dissatisfied. Again there is Mr. Thomas (No. 68), whose model attracted marked attention: does he not feel aggrieved? And lastly, has Mr. Birnie Philip, whose model (No. 13) was so elaborate and conspicuous, no cause of complaint? But the fact is, the members of the profession generally are unwilling to take any steps in the matter from motives of delicacy, lest they should be looked upon as disappointed men and "grumblers," and so they are forced to acquiesce in the verdict that has been pronounced. AMATEUR.

SIR CHARLES EASTLAKE has drawn up a report on certain minor galleries of pictures which exist in London, for the benefit of the parliamentary commissioners. The report, besides serving its special purpose, contains much curious information on old portraits and pictures, and on City companies.

THOUGHTS ON THE DESIGNS FOR THE WELLINGTON MONUMENTS.

THERE are three modes of treating monumental subjects,—the allegorical, the historical, and the religious. The allegorical is generally supposed to be the most elegant and poetic; the historical the most practically instructive; the religious the most impressive. In the allegoric, the effigy or statue of the illustrious deceased is often but a secondary object in the group. His virtues, represented in stone or marble, attract the regards of the spectator more than the figure of the hero in which they are supposed to have dwelt, and this necessary result of fine statuary conceptions of valour, fortitude, prudencies, &c. produces often a depreciatory comparison of the man himself whom the nation delighteth to honour. It has also the inherent defect of requiring explanation, or valour may be confounded with fortitude, prudence with some kindred virtue. The expression of valour or of fortitude, in peculiar and fine human faces may be known to artists, and a few great observers of the influence of these virtues on the exterior man; but the general public will require to be told "this is intended for Fortitude," "this for Valour," &c. All such explanations weaken the force of the combination, and introduce criticism as to poetical propriety, when the mind wants full moral impression. Hence allegory, with modern Christians, is almost always weak. Amongst the Greeks they had their unquestionable Minervas and Mercurys, the well-known deified types of Wisdom and Eloquence, and when these sacred embodiments of goddesses and gods were made parts of a public monument to the memory of an illustrious warrior or citizen, they carried with them all the expression requisite to convey his peculiar claims to remembrance to every beholder. But with us who believe in one God, the great bestower of all mental powers, as well as all physical blessings, there are no such means of communicating an instantaneous *poetic* impression that the distinguished dead was remarkable for eloquence or valour, except the plain, straightforward one of an epitaph. The allegorical mode, therefore, seems not applicable to our times and the general conceptions of the national mind. We find that in the Middle Ages, when warriors fought especially under the banner of the Cross, their monuments contained this fact asserted in very simple language. It was the one which constituted all their praise, or in which all other distinctions were lost—and they lie on their biers, with hands uplifted, asserting no claim whatever to be surrounded by *attributive* figures of Valour, Justice, or Mercy. This is the simply *religious* and *impressive* mode of monumental erections. I believe few persons have looked on such monuments without feeling their simplicity to be more affecting than all the poetic episodes which could be written in artistic language, in the elaborate hieroglyphics of the virtues crowded round our modern tombs! Such groups, at all events, are not calculated for churches,—therein the praise of God, not the praise of man, is to be proclaimed, more especially the praise of deeds, which, however they may have consolidated the power of a particular country, may be regarded by many as totally at variance with the spirit of the Christian religion preached in that very edifice. If these actions be regarded as nationally worthy of praise, on account of the merit of valour or prudence which they display, a building should be specially erected for the reception of such statuary as would demonstrate the national respect for the bravery, the eloquence, or the patriotism which these magnates manifested,—and let it be called in plain, but, elegant English, "The Temple of the Illustrious." But leaving this suggestion for the present, I would pass to the individual subject of this discussion.

Many of the designs, if compared with the views here (but with all due deference enunciated), will appear totally unfit for erection in the temples of Most High. Figures of Fame blowing the trumpet over the heads of the spectators to the praise of the departed, with a retinue of embodied attributes surrounding the base of the monument, or otherwise distributed, will not be regarded as a satisfactory exposition of national good sense and religious reverence in relation to the subject. The Star-Monument seems peculiarly unfit for the House of God, and almost reminds us of the expression, the "*Star* of your God Remphan," associated with another Deity of revolting character in Sacred Writ. All such conceptions of the forms in which homage should be offered to patriotism or valour should not be permitted to enter the sanctuary of the Lord Jehovah. But if it still be desirable to introduce into the cathedral where the hero is buried a monument expressive of this fact, let it be historical but also religious. Let him repose upon his bier under a canopy not too elaborate, and let some of his chief and trusted companions stand round musing of the end of all greatness: one in the attitude of prayer might with good effect be introduced. Thus moral truth, biographical and historical fact, and *religious sentiment* would be blamelessly combined, and the labours of the sculptor would convey, instead of fanciful shapes of non-existent beings, the veritable features of those who shared the great warrior's deeds, and rejoiced in the long years of prosperity with which they were crowned.

I trust these few remarks may not be considered presumptuous: they are, indeed, offered with much deference, and in the hope that other and greater minds may be disposed to bring the light of their own reflections to bear on a matter which has much to do with the character of our national taste, and the hereafter of sculpture as an educational aid to the intellect of future generations.

Allegorical flatteries, as they cannot be made pleasingly comprehensible, as they are read with painful hesitation, are, therefore, neither consistent with the honour of God nor the enlightenment of man, and should, I venture to suggest, be eschewed *altogether*. In an age that knows nothing, happily, of mythology, as a creed that does not relish allegory, the historical and the religious are sure to be welcomed by every heart; and these two are assuredly sufficient for the employment of the highest faculties of the professor of sculpture. We have so many, too, whose powers are of the best order, that it would be quite a subject of regret to give their minds a false bias by a faulty choice on this great occasion: the sublime dignity of Lough, the exquisite delicacy and feeling of Macdowell, the beauty of Bailey, and the grace of Marshall, with the varied excellencies of many others that might be named, should render us careful to afford on these gifted spirits an opportunity of manifesting their innate love of historic truth and genuine piety. These minds *must* have such a love, and with this conviction let the educated portion of the nation labour to render their heaven-bestowed powers available truly to honour God, and *clearly* to instruct man. S. E. MILES.

FOREIGN INTELLIGENCE.

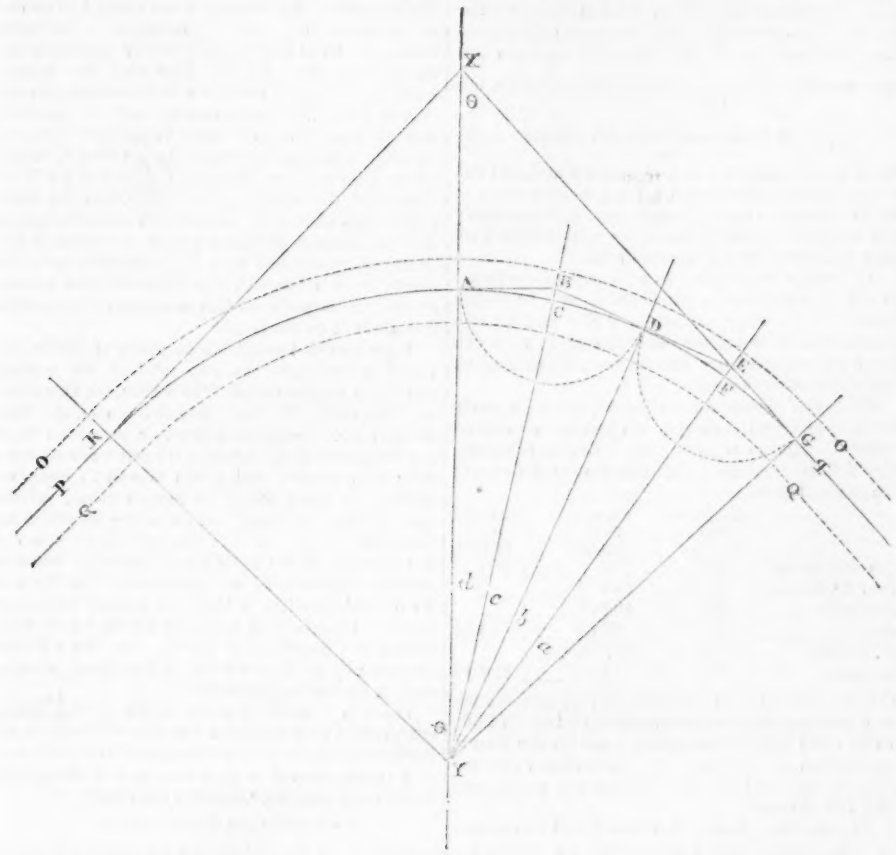
The Dome of Cologne. — The report of the Central Building Commission mentions that the receipts for the half-year ending, amounted to the large sum of 32,000 thalers. It is characteristic of the times, that some of the Jewish firms of Cologne begin to contribute considerably towards the restoration of the huge cathedral.

Paris.—A huge Hippodrome.—The French Government has decided on building a huge Hippodrome, to afford room to 25,000 people: 15,000 soldiers will be admitted *free*, as a sort of antidote against the immorality and intemperance prevalent in that class: 10,000 persons are to be admitted at a small entrance fee, just to cover the expenses of the establishment. There are to be horse races and other equestrian exercises, as well as athletic (gymnastic) games. . . . . *Panem et* . . . .

Paris.—Palais des Archives.—This French Record-office occupies the place of the Hôtel of the Duke de Soubise, originally erected in 1697. His successor, Duke Rohan Soubise, had it ornamented by the first architects of the age, as well as by sculpture of Couston, and paintings of Natoise, Carle Vanloo, &c., which made it one of the finest palaces of the French capital. The revolution made it public property, and being appropriated in 1808 to the collection of States' records, various improvements were effected in the course of time. In 1838, Messrs. Dubois and Dulory were named architects of the Palais des Archives, and one million of francs was expended in ameliorations and restorations. M. Greterin also was associated to these labours, and another million expended between 1841 and 1845. Few Parisian buildings present a similar character of solidity and firmness, the walls being constructed of hewn stones. The floors are of iron and pottery; the roof is also of iron, covered with zinc. Two huge *reservoirs* convey thither, through 500 metres of tubes, the waters of the l'Ourcq, which terminate in *ten fountains*, being an ample protection in cases of fire. All these works have made another grant of one and a half millions of francs necessary. The works now in progress comprise the restoration of the buildings, forming the front towards the Rue du Chaume, and the repairing the fountain called du Paradis.

FALL OF A HOUSE IN THE CITY.—Near the parish church of St. Nicholas, Fish-street-hill, are a number of extremely old houses, some of which were in a dilapidated condition. Amongst them was No. 4, lately in the occupation of Mr. Kingham, baker. Between the houses Nos. 3 and 4 is a narrow passage, leading to Moore's-buildings, inhabited by a number of poor families. Shortly after midnight the inhabitants of the other houses were thrown into an indescribable state of consternation in consequence of a fearful crash taking place resembling a clap of thunder. The house No. 4, had fallen.

ON TRACING CURVED TUNNELS.



In tracing the various trigonometrical lines for fixing with precision the different points required to be determined in the axis of a curved tunnel, it is needless to say that great care is necessary. If the lines are started wrongly in the first instance, the error will continue through the whole length of the tunnel, and the point of exit not arrive at the position required; or if the tunnel should be worked at both ends at once, and by shafts at the same time, as generally happens, serious inconvenience and expense will be incurred in attempting to rectify the original errors committed on commencing the curve.

The arithmetical operations for calculating the various lines, angles, and positions of the fixed points in the axis of the tunnel are neither long nor difficult, and do not require any complex, algebraic, or other formula, either to work out or demonstrate.

It is not the object of the present paper to enter into the preliminary steps necessary for determining the position of the axis of the tunnel on the general plan; these are assumed to be complete on the detailed plans made for construction of the line of railway; neither is there any intention of treating, generally, of tunnels and tunnelling. It will be confined to pointing out a short and simple method of finding the required lines from the given data, and showing briefly the method of using them afterwards to trace the commencing points of the axis of the tunnel, of course, underground; for the same lines and points traced on the surface are of no great use to the miners underneath, although they are useful for occasionally testing the accuracy of the back lines, or fixed points, used for directing the miners in their work, and keeping them in a right direction.

It is assumed that the detailed plans are made complete, and from them and by calculation, the radius of the curve is determined, the development of the curve, the length of the tangents, and the angle or semi-angle between them, which are also required for fixing the points of an ordinary ground curve, and also forms the principal data from which the lines required for tracing the tunnel are to be deduced.

In the annexed diagram the line K, A, C, D, F, G, is the development of the curve along the centre line or axis of the tunnel. The dotted lines O Q denote the width of the proposed excavation for the tunnel, which is much exaggerated here, for the sake of distinctness. The lines Y K and Y G are the two tangents to the curve, their prolongation being the axis of the straight portion of line of railway, the curved tunnel, in this case, commencing at the tangent points G and K; the length of the tunnel here being assumed as equal to the whole length of the curve, which, however, is not always the case, as the tunnel may commence and finish at any other part of the curve within the tangent points, or be continued beyond these points, along the straight part of the line.

The object sought is the means of fixing accurately a series of points, G, F, D, C, A, on the axis of the curve; in the diagram these points are only marked on one side, as the same lines and points apply equally for the other, as in the subsequent operations the lines and angles are mere repetitions of one another. To effect this purpose we must find the length of the line G E, the sub-tangent; the length of the line F E; the angle G E F, and its double, G E D: these lines being once determined, all the other lines and angles are precisely the same.

It is obvious from the nature of the question and the diagram, that the length of the two required lines, G E and E F, are in practice limited by the formation, width, or excavation of the tunnel; because if the sub-tangent, G E, is taken too long, the line E F will be longer than the half width of the tunnel, and, consequently, useless for all practical purposes.

As the series of sub-tangents form a polygon circumscribing the axis of the tunnel, it is evident that if these lines are taken too long, it will not be possible to set out the lines E F and B C underground as the excavation progresses, because if they are equal to the half width of the tunnel, there will not be sufficient room for the engineer to operate between the instrument and the flank walls of the excavation; they must, therefore, be so chosen, as to be less than the semi-transverse formation width of the tunnel.

It will save time and trouble if, in the first instance, this line is determined approximately, either by a few rough calculations, or by drawing the curve to a sufficiently large scale, and marking thereon the first sub-tangent G E, and the line E F, from which its approximate length is readily obtained. From this approximation it will be easy to determine into how many parts the semi-angle ϕ, or the curve A G, had best be divided into, so as to give the line E F of convenient length for using within the narrow limits of the tunnel.

In the diagram the semi-development of the axis of the curve is divided into four parts only, for the sake of distinctness; in practice, however, the number will depend on the circumstances of the case, the radius, and width of the excavation.

In general, the greater the number of fixed points in the curve the better; but there is a limit to this, for if too numerous, the respective lines and angles will be so small that considerable difficulty will be experienced in operating on the ground, or rather, underground, in setting out the lines. All that is required is to get these lines of lengths suitable for easy operation in the works, so that they may be readily traced, and the angles easily set out by the theodolite.

From the detailed plans, and from the nature of the question we have given,—

θ = the semi-angle between the tangents.

G X = the length of the tangent.

Y G = the radius of the curve, as well as the length of the curve, and the right angle Y G X.

From these two angles the third angle, ϕ, is found; $\phi = 180° - (Y G X + G X Y)$, or, $\phi = 90° - \theta$ 90° : 0 : 0

In the diagram the curve is subdivided into four equal parts; consequently, each of the small angles, a, b, c, d, one-fourth of the angle ϕ, and generally the small angles, are equal to ϕ divided by the number of divisions into which it is found practically convenient to operate with the tangents of these angles.

In the first small sector, Y E G, we know the small angle, a, the right angle, Y G E, and the radius, Y G, to find the sub-tangent, G E, and the hypothenuse, Y E, from which to find the short line, F E.

If now we take the line Y G as the radius to the angle a, G F is the tangent of the angle a, and Y E the secant of the same angle in terms of the radius of curvature of the tunnel.

Hence we have—
$$E G = Y G \times \text{tan. } a,$$
$$Y E = Y G \times \text{sec. } a,$$
$$F E = Y E - Y F,$$
$$= Y E - \text{radius};$$

or, having found the line G E in terms of the radius we have $Y E^2 = Y G^2 + E G^2$, which may be used as a check to verify the other computations.

Knowing the radius of curvature and numerical length of tangent G X, the bisectrice X Y is known from the same formula for $Y X^2 = Y G^2 + G X^2$

and A X = Y X — radius.

By the principle of geometry it is shown that

$$K X^2 = Y X \times A X$$
$$= (2 \text{ rad.} + A X) \times A X.$$

The next operation is to find the angle G E F, which is easily done, as we know the small angle a, and the right angle Y G E, to find the third angle $= 90° - a$, the double of which gives the angle D E G contained by the two sub-tangents D E and E G. We are now in possession of all we require, for we know the lengths of the lines E G and E F, and the semi-angle F E G, and its double D E G; for by the construction of the diagram, the four angles a, b, c, d, are equal to each other, the lines G E, E D, D B, B A are each equal, B C and E F are equal, and the angles G E D, D B A are equal: so that all these lines and angles are repetitions of each other, which may thus be continued through the whole length of the curve, and the points G, F, D, C, A by means of them traced on the centre line of the tunnel, or axis of the curve.

By means of these simple formula the required lines are easily determined, and their arithmetical values found in terms of the radius, whatever that may be. These lines and angles once determined, it is not a difficult operation to fix the necessary points and guiding lines on the ground, to insure the accurate position of the various points on the axis of the tunnel as the work progresses; great care and frequent verification, however, being necessary to guard against any deviation, either from derangement of the standard points or negligence of the overlookers.

From the preceding observations, the following rules may be deduced:—

To find the length E G on the main tangent to the curve: multiply the radius of the curve by the tangent of the small angle a, and the result is the length of the sub-tangent in terms of the radius, which line forms one of the equal sides of the polygon circumscribing the curve.

To find the length of the line E F, which fixes the point F on the axis of the tunnel: multiply the radius of one curve by the secant of the angle a, and from the result subtract the radius, the difference is the length required of the bisectrice of the angle G E D. These two operations give the arithmetical results required, but to avoid tedious multiplications logarithms are most convenient for use.

The following from the Combe Escure cutting on the Beziers Railway, France, which was commenced as a tunnel, but subsequently changed to an open cutting, to get stuff for a heavy bank 60 feet deep, containing upwards of 100,000 yards, may be taken as an example.

Radius of the curve	400	
Angle between tangents	93°	48′
Half this angle = θ = ...	46°	54′
Angle at the centre = 90°— 46° 54′ = ...	43°	6′
Log. tangent 43° 6′		9·9711754
Log. radius 400		2·6020600
Log. tangent G X ..... =		2·5732354
Tangent G X ..... =		374·316

The half-length, or development of the curve, is equal to the length of a circular arc of 40° 6′, multiplied by the radius, = ·7522369 × 400 = 300·8947, and consequently the length of the whole curve = 601·788 in terms of the radius.

In this case the angle at the centre, A Y G, and, consequently, the length of the curve, was divided into eight equal parts, thus giving eight short

sub-tangents or lines, G E, E D, D B, B A, and four equal lines, corresponding with E F, B C, in the diagram, which for reasons already explained is only divided into four equal parts; so that in this example we are enabled to fix nine points in the axis of the curve corresponding with G, F, D, C, A, in a length of curve of 300,894 mètres.

As the angle at the centre, in this example, was divided into eight parts, we have,—

Angle at centre = 43° 6′;
½ angle at centre, = a = 5° 23′ 15″

Then G E = radius × tangent a.

Log. tangent, 5° 23′ 15″ = 8·9726244
Log. radius, 400 = 2·6020600
Log. tangent G E = 1·5746793
Tangent G E = 37·556

Also Y E = Y E × secant a;
or, Y E = $\sqrt{Y G^2 + E G^2}$ =
= $\sqrt{161410}$ = 401·7587;
then F E = Y E − Y F = Y E − radius,
= 401·7587 − 400 = 1·7587.

For the bisectrice we have Y X = $\sqrt{\text{rad.}^2 + \text{tangent}^2}$
or, Y X = (2 rad. + A X × A X,
= 547·828;
and A X = Y X − X A = 147·828.

Then, for the angle G E F, we have,
G E F = 90° − 5° 23′ 15″
= 84° 36′ 45′
G E D, the double, = 169° 13′ 30″

This angle enables us to fix the point F, and determines the direction of the second line, D E, which is a tangent, to the curve at D: we are now in possession of all the elements, which may be collected and arranged as follows:—

Radius of the curve	400
Bisectrice X Y	547·828
Line A X	147·828
Tangent G X	374·316
Length of curve	601·788
Angle between tangents	93° 48′
½ angle = θ	46° 54′
Angle ϕ at centre	43° 6′
Angle Y E G	84° 36′ 45″
The double D E G	169° 13′ 30″
Angles a, b, c, &c.	5° 23′ 15″
Sub-tangent E G	37·556
Secant or line Y E	401·7587
Line E F	1·75877

In the example in question, the extreme width of the excavation, including the thickness of the walls on both sides, was 5·750 mètres, the tunnels being made for a single line only,—whence the half width is 2·875 mètres: consequently, the line E F must be less than this quantity to allow room for the engineer to operate between his instrument and the flank walls of the excavation, when he has to set out the angle D E G, and its bisecting line E F, to determine the two points D and F on the axe of the curve; in this case, it is 1·578 mètres, being 1·297 mètres less than the semi-transverse axe of the excavation for the tunnel, which is amply sufficient to allow free scope for his operations.

The method of using these lines and angles is sufficiently simple. The line P X being the axis of the straight part of the railway, and G the commencement of the curve, in which the tunnel is placed, the point G must be accurately and permanently fixed, with two or three of the back points, in the direction P on the axis of the railway, so as to be able to refer to them when necessary to verify the line G E in the works.

To trace the curve, we proceed as follows:—Continue the line P G in the exact direction P E, and measure off the length G E, as found from previous calculations, and fix a permanent mark at E. Place the theodolite at E, and set off very exactly the angle G E D, which fixes the direction of the second line E D, which will be ultimately prolonged double its length to the point B. Divide the angle D E G in two equal parts, and from the central fixed mark E, set off the length E F, and F will be the second point on the curve,—and when the work has progressed to B, repeat the operation and so on, for all the other points. Considerable care and accurate verification of the various lines and angles are required to prevent errors creeping into the work. The permanent bench marks are generally square dressed stones, of suitable size, firmly fixed in the ground, two intersecting diagonals being legibly marked on the face, the point of intersection of these lines being the centre of the fixed point required.

From the nature of the question, the line G E is always small in comparison with the radius of curvature, and the line E F still more so; hence, as an intermediate check to the work, if necessary, we may find other points between F and G on the axis. Suppose we measure off on the sub-tangent G E points at any given equal distance apart from each other, we may easily find the off-sets from those points on the sub-tangent to the curve, measured at right angles to the sub-tangent; for if we make π = equal to the first given off-set, call the radius R, and distance measured on the sub-tangent δ, we know that approximately $\pi = \frac{\delta}{2R}$ = length of first off-set, and $\pi' = \frac{\delta^2}{R}$ = to the second, third, &c. off-sets: hence these minute quantities may be readily found, and two or three intermediate points marked on the curve, to check the excavation as it progresses, and thus verify the work step by step, when the principal lines are once well determined and securely fixed.

The length of the line, or chord, uniting the points D and G (not shown in the diagram) may be readily found, for we know the angle D E G and its two including sides to find the remaining side, as the two other angles are already known lines, which may be useful in testing the work.

By way of illustration, the following tunnels, partly straight and partly curved, are given, as executed under C. Hutton Gregory, esq. Engineer-in-chief, Mr. T. J. Hay, resident, on the Graissesac Railway, in the south of France.

	Radius of Curve. Mètres.	Curved Part. Mètres.	Straight Part. Mètres.
L'Aire Raymond	300	116	508
Four à Chaux	300	283·77	„
Tourbelle	300	102·15	„
Vebre	300	38 61	43 55
St. Raphael	300	237·20	„
Caumette	300	85·88	537·19

Petafy—straight tunnel, length 1477·52 mètres; the four principal shafts being respectively 72·63; 76·58; 79·40; and 109·53 mètres deep; and Combe Escure, commenced as a tunnel, but subsequently changed into an open cutting of 300 mètres radius, and 601·788 in length.

In conclusion, it may be observed that this system of sub-tangents applies equally well for the trace of ordinary curves on a railway, as the off-sets are never far removed from the curve, and may be chosen of convenient lengths for operation in the field; and since each process is a repetition of the first in every respect, it will be easy and expeditious in practice with a good instrument.

Joseph Lockwood.

ANCIENT ARMS AND ARMOUR.

Ancient arms and armour afford to the inquiring and artistic mind many points of great interest, and may be studied with much advantage. There is a singularly fine collection, as we have already said, amongst the Art-treasures at Manchester, partly from Goodrich Court, and partly from the Tower. A well-known authority on the subject is contributing some papers on this collection, with comments, to the *Manchester Guardian*, and we have made some gleanings from these, confining ourselves to anecdotes and observations of general application. On the subject of ancient arms and armour, says the writer, nothing but the most confused and erroneous ideas existed at the commencement of the present century. Francis Grose had published (1786-1801) his military antiquities, full of valuable documents and false deductions. Joseph Strutt, the most laborious and unassuming of archæologists, had scattered here and there throughout his voluminous works, important facts without systematic arrangement or scientific investigation. It remained for Sir Samuel (then Doctor) Meyrick to collect, to examine, to sift, to classify, and chronologically marshal all these and numberless other evidences, and to produce, as the result of his enthusiastic yet cautious labour, his "Critical Inquiry into Ancient Arms and Armour," which, despite the imperfections almost unavoidable to the first publication of an extensive work upon a forgotten art and an abstruse subject, increased by the peculiarly disadvantageous circumstances under which it passed through the press, will continue to be the grammar of the English student in this branch of archæology. The practical knowledge Sir Samuel eventually derived from the accumulation and examination of existing specimens of the weapons and personal defences of our ancestors, was communicated some twenty years afterwards to the antiquarian world in two quarto volumes, entitled "Engraved Illustrations of Ancient Arms and Armour" (London, 1830).

The plan Sir Samuel Meyrick pursued in this particular investigation is one which cannot be too strongly recommended to all critical inquirers. He appropriated certain drawers to certain centuries, and threw into each, as he made or acquired them, the notes and authorities, engravings, drawings, tracings, &c. which appeared to appertain to such particular periods. Having thus in the course of many years collected an immense mass of material, he sat patiently down to examine and compare the dated and undoubted evidences with those supposed to belong to the same eras. By this test he was enabled to correct an erroneous date, and to recognise a particular fashion, to detect fraud, and to rectify misconception. Every thing that did not tally with the general features of the age to which it had been assigned was ejected from that compartment, and, if genuine, speedily found its proper place in another. Shrewd, cautious, indefatigable, warped by no theory, misled by no assertion, he toiled on in pursuit of truth, his veneration for which, in all things, was the finest point in his character. Due as this acknowledgment is to his memory, particularly from the writer of this article, it would not have been obtruded upon the reader, did it not furnish one of the strongest guarantees for the integrity and instructiveness of the collection about to be described.

A few corroded sword-blades, bosses of shields, and a spur or two, form the sum total of the military remains as yet discovered of the Saxons, the Danes, and the Normans. Of their personal ornaments, their manuscripts, drawings, and furniture, there exist ample and rich collections; but from the perishable nature of their body armour, which was principally composed of rings or small plates, of various forms, stitched upon leather or linen, no authentic specimen has descended to us. Within the last ten years four or five helmets of the twelfth and thirteenth centuries have been discovered; but previous to the death of Sir Samuel Meyrick, in 1848, no armour was known to exist in England of a date earlier than that of the helmet and gauntlets of Edward the Black Prince, preserved by good fortune rather than good guardianship, in Canterbury Cathedral.

There is a beautiful ivory saddle at Manchester, engraved all over with love verses in old German, and the figures of the two personages whose sentiments they express, carved in high relief and in the costume of the time, recalling Chaucer's description,—

"His saddle was of whale's bone,"

such being in the middle ages the ordinary name for ivory, which had become familiar to the Normans originally by the use made of the tusk of the walrus or sea-horse, and whose descendants continued to apply to elephantine ivory the ancient term for all similar material. At the entrance is also to be seen the morning star, a formidable weapon, used from the earliest times to the reign of Henry VIII. and still carried by the watchmen in Norway; and specimens of the two-handed sword, which seems to have been first used in England about the commencement of the fifteenth century, and remained in fashion to the middle of the sixteenth.

Although the era of complete plate is assigned with good reason to the reign of Henry V. and the armour of that time possessed characteristics which could not easily be mistaken, it is a singular fact, that in no public or private collection in England, France, or Germany, that is known to the writer, nor in the works that have been published illustrating the imperial and royal armouries of Russia, Spain, and Sardinia, is there to be found a suit which could be confidently ascribed to an earlier date than 1425. The tilting helmet, saddle, and shield of Henry V. moulder in rust and dust on oaken rafters, almost out of sight, over his tomb in Westminster Abbey; and helmets and spurs of that period are to be met with occasionally. Two bascinets remain at Goodrich Court, and one of similar form to them will be seen in the armoury on the north side of the nave, but not a fragment of the long steel coats that bore the brunt at Harfleur or Agincourt have been as yet identified. In the Tower of London, in the Musée d'Artillerie at Paris, the Rust-Kammer at Dresden, and the Ambras Collection at Vienna, the earliest suits present the same features as those to be observed in the mounted knight from Goodrich Court, referred to. The headpiece is the salade (so called from the Italian *celata*), introduced to England apparently in the reign of Henry VI. though the bascinet continued to be worn with and without the vizor. The peculiarity of the salade consists in its covering the upper half of the face, a horizontal aperture being made for the sight, as in the earlier tilting helmets, and projecting considerably behind, where it terminates in a peak like the knight's chapeau, which was usually worn over it. The lower portion of the visage is guarded by a piece called the hausse-col, rising above the chin, and almost meeting the rim of the salade. The breast and back-plates are of exquisite form and workmanship: the former consists of three pieces, independent of the taces (as the plates were called below the waist), and the latter of four, not including the skirt, and is fluted in the most tasteful manner, imitating the gatherings of some textile fabric. The sollerets, or steel shoes, are sharply pointed (a distinguishing characteristic of this epoch), and the outlines of all the pieces extremely elegant. It is of German manufacture. On the left

arm is a fine shield, also German: the notch on the side was called the bouche, and was made for the passage of the lance. It does not appear before the reign of Henry IV. in England. The left thigh is protected by what English antiquaries call a socket (a fashion peculiarly German), the ornamentation of which induces us to attribute it to the same period as the suit.

Looking at the lobster-tailed casques, backs, breasts, and tassets, worn by the cavaliers and Roundheads in the civil wars, and, while contemplating the single and triple-barred helmets of this period, a circumstance is recalled to our memory which may not be without its lesson. Sir David Wilkie did the writer of these lines the honour of consulting him respecting his elaborate picture of John Knox Preaching the Reformation. He was desirous, he said, of being very correct in the costume he had introduced, and requested a candid opinion upon it, the picture being then finished, and ready for removal to the Royal Academy for the purpose of exhibition. On its being pointed out to him that he had introduced in the gallery of the church military personages wearing the barred helmets of the time of Charles I. in the reign of Mary Stuart, he replied that his reason for so doing was, that these persons were to be supposed as having visited the church with a desire to be unknown; and yet he had actually selected—more in the spirit of an Irishman than of a Scotchman—the open head-piece of the seventeenth century, through the bars of which the face was distinctly visible, in preference to the helmet of the sixteenth, the closed vizor of which would have defied scrutiny! The glaring absurdity of this anachronism was, notwithstanding, allowed by the great painter to remain, and to be disseminated by the burin of the engraver, although it might have been remedied in half an hour, with as much advantage to the effect of the picture as to its historical accuracy.

This anecdote "reminds us," as an inveterate story-teller would say, of one more creditable to the taste and intelligence of another Royal Academician. Mr. A. Cooper's "Battle of Bosworth" graces, by permission of the Earl of Durham, the walls of the Gallery of Modern Artists in this Exhibition (No. 195). While at work upon it the painter consulted Sir Samuel Meyrick as to how King Richard III.'s horse should be caparisoned. "In silk housings embroidered with the royal arms," was the answer, "covering the steed from his ears to his hoofs." "Oh!" exclaimed the mortified artist, "that will never do for me: my principal object is to paint White Surrey, and if I cover him from head to foot, as you describe, I may as well not paint him at all." "But," rejoined the antiquary, "you tell me the moment you have chosen is that in which Richard made his last desperate charge and slew Sir John Cheney, Richmond's standard-bearer. Now, as this was at the close of the battle, the caparisons of the horse would probably by that time have been cut and torn to shreds, and the colour and anatomy of the horse in that case might be rendered sufficiently visible for your purpose." The true artist jumped at the suggestion. Look, reader, at the result: the silken housings rent to ribbons streaming in the wind add action to the horse, tell a terrible tale of the fury of the fight, and completely satisfy the archæologist, while they display the peculiar genius of the painter, and give additional effect to the picture.

Amongst the most interesting specimens of fire-arms will be found the dragon, so called from the head represented at the muzzle, and from the use of which the troops now known as dragoons derived their name, a hand mortar of the time of Elizabeth, for throwing grenades, a snaphaunce, a blunderbuss, wheel-lock pistols, and dags of various dates, and a fine pair of pistols by Lazzarino Comminazzo.

The baton of the renowned Duke of Alva, presented to him by Philip II. of Spain, is of steel, hollow, to contain the muster-roll of an army, and covered outside with Arabic numerals in gold, with divisions of silver on a russet ground. These are the results of calculations, according to the system of warfare in the sixteenth century, by which the general is apprised what number of men would occupy any given space. Some phrases in the French language are supposed to allude to this description of numerical truncheon, such as "*Etre bien assuré de son baton; obtenir son objet par le tour du baton*," and "*Etre reduit au baton blanc*," i.e. to his last shift by the exhaustion or obliteration of the calculations.

[The writer himself, we will venture to say, is not of this opinion, for these phrases have evidently no special reference to this description of truncheon.]

In commenting on the North Armoury, from the tower and elsewhere, the writer speaks at some length of a suit (against the staircase screen) made for Henry Prince of Wales, the eldest son of James I. whose early death was so universally lamented. It is the identical one in which he is painted in the well-known full-length portrait, by Van Somers, at Hampton Court, which, it is much to be regretted, is not amongst the historical portraits exhibited from that palace. It is profusely decorated with the royal badges of England, France, and Scotland, the rose, the fleur-de-lys, and thistle, as well as the letters H. P. conjoined under a coronet, the chanfront for the horse's head having the prince's arms in full, gilt and enamelled. An extra gauntlet for the right hand, belonging to this suit, is in the Meyrick collection (glass case), and an extra helmet is placed at its feet, while it is surrounded by a complete set of tilting-pieces (*pièces de renfort*) and an extra vam-plate for the lance. On the left-hand of the figure is the long-bridled gauntlet. This chivalric young prince, who is said to have been "in armour frequently five and six times a day," applied, at the early age of ten, to Colonel Edmonds, to send him a suit from Holland; and in 1607 the Dauphin, son of Henry IV. of France, sent him a suit well gilt and enamelled, together with pistols and a sword of the same kind, and armour for a horse. Three years later, 1610, on being created Prince of Wales, he caused a challenge to be given to all the knights in Great Britain, under the name of Meliades, Lord of the Isles; and on the day appointed, assisted only by the Duke of Lennox, the Earls of Arundel and Southampton, Lord Hay, Sir Thomas Somerset, and Sir Richard Preston, his instructor in arms, sustained the combat against fifty-six earls, barons, knights, and esquires; Prince Henry himself receiving thirty-two pushes of the pike, and about 360 strokes of the sword; being then not quite sixteen years of age. Sir Samuel Meyrick, who was anxious to identify the relic which he had acquired, remarks, that from the above circumstances of most of Prince Henry's armour being sent from abroad, the impression would be that this suit was of foreign manufacture; but there is in the State-paper Office an original warrant, ordering the payment of the sum of 200*l.* the balance of 340*l.* for a rich suit of armour made for Henry Prince of Wales, dated July 11, 1614; he having died on the 6th of November, 1612. This document is directed by King James I. to the commissioners for the exercise of the office of High Treasurer of England, and states that "whereas there was made in the office of our armoury at Greenwich, by William Pickeringe, our master workman there, one rich armour, with all peaces compleate, fayrly guilt and graven, by the commandment of our late deere sonne Prince Henry, which armour was worth (as we are informed) the somme of three hundred and forty poundes only, soe as there remayneth due unto him the somme of two hundred poundes;" therefore they are ordered to discharge the same forthwith. Now, as the suits sent from Holland and France, in 1604 and 1607, were made for Prince Henry at the ages of 10 and 13, the size of the one before us renders it exceedingly probable that we have here actually the "rich armour, with all pieces complete fairly gilt and graven," made by William Pickeringe, at Greenwich, when the prince was in his eighteenth year, and which was ordered by him most likely with a view to some grand chivalric entertainment in honour of the visit of the Elector Palatine, the affianced husband of his sister Elizabeth, whose nuptials, however, he did not live to celebrate. In 1660 we have, apparently, another notice of this superb suit, which seems to have been amongst those originally kept in the gallery at Greenwich, but afterwards removed to the Tower; for in an inventory taken in that year by order of a commission issued by Charles II. we find "upon a horse statue of wood, one compleat tilting armour cap-a-pe, richly gilt, part graven, part damasked, made for Prince Henry, with two gauntlets and one gilt grand guard, the horse furniture being one shaffroone of the same sort." The mention of two gauntlets is interesting, because it evidently implies two extra gauntlets, as they are coupled with the grand guard, the armour being previously described as complete cap-a-pied, which it would not be without gauntlets. We know where the extra right-hand gauntlet is. The other, it is probable, was an extra bridle gauntlet.

At the conclusion of his papers, the writer points to the two armouries in the Exhibition of Art Treasures at Manchester, as the first attempt to make such collections instructive, by familiarising the eye to the gradual progression of form and ornament. The Rust-Kammer at Dresden, the Musée d'Artillerie at Paris, and other similar museums, are merely large storehouses, the valuable contents of which are more or less picturesquely displayed. In the Tower of London, Sir Samuel Meyrick, some years ago, succeeded in obtaining permission to abolish the most glaring absurdities, and to place the mounted suits in the horse armoury in their true order, but on the singular condition that names of historical personages should be appended to them all, whether with or without any reasonable foundation for such appropriation; and this childish practice is persevered in, to the obvious depreciation of the value of such suits as can actually be assigned to their original owners. The chronological arrangement of the armour at Manchester, by showing what can be accomplished despite all the obstacles arising from restrictive pledges, conflicting interests, limited space, and disadvantageous position, may happily have some influence on public opinion, both at home and abroad, and induce those who have the power, to exert it in improving the character of those national collections which, instead of merely gratifying idle curiosity, should be made to afford most valuable information, artistic, historical, and biographical.

ELECTRO-TELEGRAPHIC PROGRESS.

The European end of the great Atlantic telegraph cable was laid with due ceremony by the Lord Lieutenant of Ireland, at Valentia, on the west coast of the island, as our readers all doubtless very well know, as also that between 400 and 500 miles of the cable were payed out, latterly, into a depth of two miles and upwards, beneath the surface of the ocean, when unfortunately the cable snapped in consequence of additional check being put on the paying-out machinery to prevent it from running out too fast. Whether this portion of the line will be regained may be doubtful, but the experience got is valuable, however costly the experiment, and there is little doubt now felt, we believe, of the perfect practicability of laying down the cable. The only question is whether this should be done in October, after the equinoctial gales of the present autumn have passed over, or whether it may not be better to put off further procedure till next year. Imperfections in the paying-out machinery require to be rectified, and we must record the fact that great misgivings existed previous to the departure of the expedition as to the efficiency of this machinery. A naval officer, too, Lieutenant F. Higginson, confidently predicted what has occurred; in consequence, as he maintained, of the circumstance that the apparatus and its management were arranged by landsmen who had not adequate experience of the strains to which the cable might be subject on shipboard.

In describing, some time since, the remarkable state of a piece of telegraph line which had been worked out in the British Channel, it may be remembered, we suggested that it might be instructive with reference to the Atlantic cable and its working. The wire was, as it were, consolidated into little pellets, completely disintegrated, and which looked as if each had been shortened by hammering on the ends. This, we remarked at the time, was quite explicable on an idea previously broached more than once by us in the *Builder*, that the influence of the positive electric force was concentrative, or *attractive*, rather than the contrary, or more analagous to cold, for example, than to heat, the *negative*, of course, being the contrary, or more of the nature of repulsive force than of attractive. The necessity or advantage of so working telegraph lines as to obviate this tendency of the positive to consolidate and disintegrate the wires, was then suggested, with special reference to the Atlantic Telegraph. Since then, a very simple, and we do anticipate, a most effectual method of doing so has been adopted by Mr. Whitehouse, whether inadvertently or with this special purpose in view we know not. The working apparatus, it appears, is so constructed that, simply by raising and depressing the handle of a key, the operator transmits alternately negative and positive electricity through the wire, and never sends two currents of the same kind successively from the same pole of the battery. One consequence of this arrangement, whether designed or not (and, indeed, one can hardly see any other design in it), will assuredly be that the perpetual tendency of the positive to consolidate and disintegrate the wire will be as perpetually counteracted by the negative, and the wire be sustained *in statu quo*, or at least in a workable condition, so far as the special influence of either the positive or the negative on it is concerned. We think we may safely prognosticate that a great economy in the sustainment of telegraph wires would follow from the general adoption of some such method as this of counteracting the influence of the positive by means of the negative.

The form of instrument at present used for developing signals by the Atlantic Telegraph Company is it seems a modification of the well-known marking instrument invented by Professor Morse.

The British and Irish Magnetic Telegraph Company are progressing very rapidly with the erection of an overground line of telegraph along the highway between Killarney and Valentia, for the purpose of connecting the existing telegraphic system with the Atlantic cable at the latter place, by means of which, under an arrangement entered into between the magnetic and electric companies, the whole of the lines in the three kingdoms, 10,000 miles in extent, will be available for the rapid transmission of intelligence between Europe and the American continent. The line is already completed beyond Killorglin, where the Magnetic Company have established a temporary

station. The entire through communication to Valentia is at this moment in all probability completed.

Mr. Edward Highton, C.E. has just completed his patent for, firstly, sending telegraphic messages both ways through one and the same wire, at the same instant, without the messages interfering in any way with each other; secondly, for preventing the destruction of a wire in the sea or underground; and, thirdly, for mending a decayed telegraphic wire in the ocean without leaving the land. It is obvious that this last invention, if really practicable, would be of enormous value to the Atlantic cable; but we scarcely comprehend its true purport.

A new system of constructing and laying down submarine telegraph cables (in sections), has been submitted to the notice of the Paris Academy of Sciences by M. A. Balestrini. The memoir was merely a preliminary one, to be followed up with details.

Before quitting the subject of the great submarine Atlantic cable, we would suggest that had one or two ropes, of sufficient length, with floats appended, been temporarily affixed to the cable as it was payed out, so as to indicate its whereabouts, and enable those engaged in laying it down to haul it up again when broken, the present interruption, and probable loss of cable, as well as of time, might have been obviated. Each successive line of rope so attached to the cable, as it proceeded, might have been separated from its float when succeeded by another, and sunk by means of weights, or by its own gravity if it were a wire rope. It might thus, too, have been made to act as a sort of anchor to the main cable, repeated at every score or half-hundred miles.

A new telegraph has been erected to connect the establishments of Messrs. Waterlow and Sons, in Birchin-lane and London-wall, London. This is the first instance, it is believed, of a telegraph being carried over houses in any large town in England. The distance between the two establishments is about one-third of a mile, and the whole space is traversed by a single wire, suspended from pole to pole, at a great elevation above the immediate houses; indeed, so much so as to be scarcely perceptible to the eye. Mr. S. H. Waterlow submitted such a scheme some time since to the police authorities, for uniting the police courts, police stations, and fire-brigade stations throughout the metropolis. This arrangement is already acted on in the United States.

INAUGURATION OF THE LOUVRE, PARIS.

On Friday, the 14th instant, as we announced last week would be the case, the emperor inaugurated the completed Louvre. Of the works here we have before now often spoken, and views and plans will be found in previous numbers of our journal. The *Times* of the 17th instant gives a full and excellent account of the ceremony, and mentions as a curious coincidence, that the inscriptions intended to commemorate the date of the foundation of the Palace of the Louvre were only discovered the day previously. To them is added the date of its completion. Both are now affixed to the front of the Pavillon Sully, which is right opposite the central pavillon—the Pavillon de l'Horloge—of the Palace of the Tuileries. They are engraved in golden letters on slabs of black marble, and are to this effect:—"1541, Francis I. commences the Louvre; 1564, Catherine de Medicis commences the Tuileries; 1852-1857, Napoleon III. connects the Tuileries with the Louvre."

On the arrival of the emperor, M. Fould, Minister of State, read an address, in which a sketch was given of the proceedings. Referring to the workmen, he said:—

"Your Majesty no longer sees at their head the eminent artist whom you had selected to complete the Louvre. A premature death, striking him four years ago, at the commencement of this great undertaking, deprived him of the honour of completing it. M. Lefuel, who was designated by your Majesty as his successor, has the glory of having finished it, and his name will remain attached with that of Visconti to the monument which we now inaugurate. The death of Visconti is not the only circumstance of which this ceremony reminds us. This year even we have lost Lemart, an artist at once bold and correct, and whose last compositions are the caryatides of the Pavillon de l'Horloge and the handsome pediment of the Pavillon Denon.

During the course of these works I have more than once pointed out to your Majesty the intelligence and the zeal of all those who have taken part in them. I have been permitted again to mention the names of those who have more particularly distinguished themselves, and to whom your Majesty has deigned to accord recompenses."

The list was then read of the persons engaged in these works, whom the Minister recommended as worthy of marks of the Emperor's approval. The names were numerous, and comprised every class, from the principal architect, sculptor, and painter, to the working mechanic—all, in fact, who excelled in their respective branches. These persons advanced as their names were called, and each received from the hands of the Emperor the Cross of Commander, Officer, or Knight of the Legion of Honour.

The Emperor, in his reply, showed that the history of monuments has its philosophy as well as the history of events.

A dinner by the Minister of State was given in the evening. The majority of the guests were of the working classes, those who have been engaged in completing the Louvre: the rest consisted of men of letters, representatives of the press, and artists. M. Fould, Minister of State, presided. On his right was M. Maret, one of the contractors for the works; and on his left a young workman named Riffaut, a stonemason by trade.

After the health of the Emperor had been drunk, M. Lefuel, the architect, proposed the health of M. Fould. After this, M. Maret, the contractor, drank "To M. Lefuel; to his agency." And then M. Riffaut, an operative, said:—

"Gentlemen, in the name of the assistants and operatives of whom I am the interpreter, I come to express the gratitude with which we are penetrated for the rewards which have been decreed to us, and to propose 'The health of the Emperor,' whose generous heart has given so many marks of sympathy for the working classes; 'His Excellency the Minister of State, a worthy interpreter of his ideas;' 'M. Lefuel, the architect of the works, a worthy completer of the undertaking commenced by M. Visconti;' and, finally, 'The Contractors, our patrons,' whose intelligent activity never ceased to guide us, and of whose kindness we shall ever preserve an agreeable recollection. *Vive l'Empereur!*"

PREMIATED DESIGNS FOR THE GOVERNMENT OFFICES.

We this week publish an illustration of the design for the War Office (on the left of the view) and the Foreign Office, by Messrs. Prichard and Seddon, of Llandaff, for the first of which was adjudged a premium of 200*l.* in the recent competition.* The view is taken from the north-west. The drawings explanatory of the complete design, as they appeared in the former exhibition at Westminster Hall, included a block plan, showing the general arrangement of Offices as proposed by the authors, besides the detailed representations of the portion of the design appropriated to the Foreign Office and Foreign Minister's residence. The drawings were numbered 140 in the exhibition, and were marked "Cymru," with the Prince of Wales's feathers. The two chief Offices and residence were designed as three distinct buildings, though grouping together and according with one another in style and character. The premium, however, was awarded, as in other cases, for only one of the Offices, apparently without regard to a question whether the merit which might be perceived in one, could be separated from what might exist in the other. The peculiarity of the award is even more remarkable in the case of Mr. Dwyer's design, where the two Offices are designed as *one building*, with a central feature which would have to be cut in two, to effect the separation. Considering that all competition designs should be viewed as made for actual execution, it cannot be considered that the judges in their desire to distribute the premiums with fairness to all, have attained their object. They have rather adopted a course which involved essentially some degree of injustice. They were, however, placed in a position of great difficulty by the instructions, and by the form in which the premiums were offered. That there should have been successive competitions instead of three undertaken at the same time; or else, that the premiums should have been announced for one comprehensive class of designs, such as those which the principal competitors felt compelled to undertake, is, we suppose, now admitted on all sides. We pointed out the mistake in the first instance, and after the drawings were sent in, and feel compelled to recur to it often. We hope architects will at length be brought to hesitate ere they attempt to work upon "instructions," worded without regard to the first elements of logic and those laws of thought which are to be departed from least of all in architects' designs; or such instructions as do not leave them and their judges free to the realization of the best work for the object. Architects should also hesitate ere they compete without security that there will be some return to them, if not employed to superintend the building—such return as they might get from a well-managed public exhibition. We are not disposed, however, to pursue this disagreeable subject. It is enough to say, that the enormous waste of labour which there has been in this recent case, is a source of constant lamentation to us.

The opposition, however, which the Government have met with in parliament, is in every respect ill-advised and discreditable. The primary object surely need not be debated about; and the pursuit of the object, with the sole exception of the management of the competition, need not be found fault with. We do not even think that a first step was to impose a limit of expenditure. Clearly, in national works, the preliminary measure is to see what is wanted for convenience and use. The means can be found—with economy and return of interest—both for that, and for any amount of decoration which an architect would deem accordant with the purpose of the structure. We are more than ever puzzled to understand the language of honourable members in treating of questions of architecture and public works. Mr. Henley is quite right in saying, that competitors would think themselves hardly treated in being put to the expense of plans which the Government had no intention of carrying out. He might well think that such course would not be an honest one towards those gentlemen. But why need he refer to the state of the Foreign and Colonial Offices, as having existed for twenty years, since there can be no inference therefrom, whilst the necessity for the speedy erection of a new building is so apparent? Or why should another honourable gentleman, uncontradicted, treat the designs for the Foreign Office and War Office by different authors, as one; and mix up the design for the conversion of the bed of the river into a flower-garden, with the others—to reason from these premisses that "architects who indulged in such poetical designs, could not complain of their plans being rejected?" Verily, the qualifications for the parliamentary sphere, which we are told are peculiar and special, must be of a singular kind, since they involve no knowledge of what a man speaks about. Has Mr. Briscoe ever been into Westminster Hall, and seen the drawings?

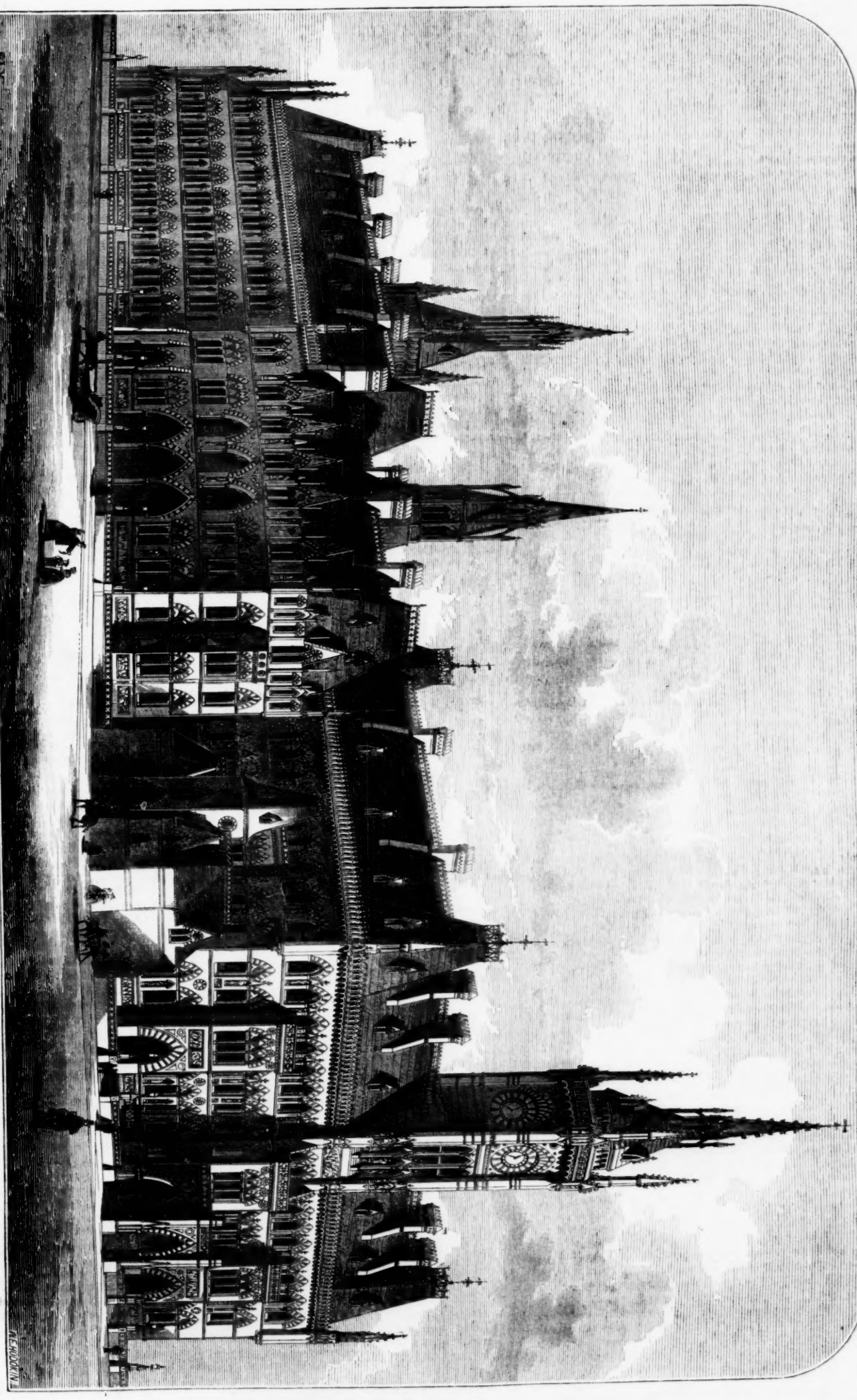
We confess to being a little led away from the immediate matter before us, namely, the notice of the one particular design by Messrs. Prichard and Seddon. Its authors have this advantage over some who have received high premiums, that nearly the whole of their project is displayed on the walls of the Hall in the collection of drawings now exhibited,—the several portions of their design—the War Office, the Foreign Office, and the Residence being on the same sheets. Their design was not without reason regarded as in many respects superior as compared with others in the same style. Its distinctive characteristic may be said to be the regularity of distribution of its window openings; and a general attention to grouping and uniformity which is admirably adapted to the character and purpose of the offices.

The buildings, in plan, are arranged about an oblong court, opening from Charles-street,—entering which by a gateway, the residence is seen opposite, at the north end. The gateway occupies the centre of a screen, or covered way between the two buildings. Each building has a lofty tower with a lantern or pyramidal roof, and a spire capping. In both the War Office and the Foreign Office, the principal feature of the plan is a large central hall on each floor, with a staircase in the middle of its area. The hall is lighted partly by windows from the ends of courts, and partly from the lantern of the staircase. The other chief feature of the plan which deserves notice, consists in the provision of numerous loggias of arches to the entrances, and square projections in other parts, so as to conform to the superficial area required by the instructions—which was different in the chief floors—and yet economically to secure an addition to the external effect, and to convenience as regards the entrances.

Another feature of Messrs. Prichard and Seddon's plan, is the introduction of a stable as a low detached building, at the north-west angle, or most prominent position. They seem to have sacrificed a considerable portion of ground, and to have injured their plan by this addition to the objects required in the instructions; and in the effect, this is the least satisfactory part of the design. The character of the design, as we have remarked, results from the general regard for symmetry. The grouped window-openings are separated by broad piers with niches. The loggias—sometimes in two stories—and the towers form central features in a front; and the projecting masses are placed symmetrically. Pointed and cusped arches, over a square lintel and sculptured tympanum, are used generally; and the details both of sculpture and ornament, display much taste. Good art is also exhibited in the staircases and the internal decoration. The design is well shown by drawings, including well-executed perspective views.

* Our drawing was prepared from a photograph made in the Hall by Mr. Herbert Watkins.

Bronze Powder.—Experiments have been instituted by Herr König in order to ascertain the method of preparing bronze powder, hitherto a secret. From the results it appears that the several varieties of bronze powdered leaf are each composed of nearly the same proportions of copper, zinc, and tin, and that the variation of colour is owing to different degrees of oxidation, which have been produced by heating the alloy at different temperatures.



DESIGN FOR THE WAR-OFFICE, TO WHICH A PREMIUM WAS AWARDED; ALSO FOR THE FOREIGN-OFFICE.—Messrs. Prichard and Seddon, Architects.

CHURCH-BUILDING NEWS.

Wantage.—We omitted to mention last week that the restoration of the parish church here has been carried out from the designs of Mr. G. E. Street, including the glass, the pavements, and the sculpture.

Leicester.—The foundation-stone of a new Independent Chapel was laid upon a vacant piece of ground nearly opposite De Montfort-street, London-road, by Mr. J. D. Harris, M.P. on the 11th instant. The design of the building is described by the local *Advertiser* as "Modern Italian, being an adaptation of the Italian style to the requirements of the present day, both as regards material, construction, and internal arrangements." The façade to the London-road will present a projecting centre, crowned by a pediment, and supported on each side by wings, forming the termination of the side aisles and galleries. In the centre part are three entrances, decorated with an enriched order of columns, cornices, &c. and quoins. The interior consists of a ground-floor and galleries, affording accommodation for upwards of 800 persons, and also a large school-room, eventually to be added to the chapel, which will then seat more than 1,200 adults. The arrangements for warming are in the hands of Messrs. Haden and Sons, of Trowbridge. The contractors for the building are as follows:—Messrs. Lindley and Firn, masons; Messrs. Cox and Son, bricklayers, &c.; Mr. Fozzard, plumber and glazier; Mr. Barsby, ironfounder; Mr. Haynes, painter; Mr. Morrell, plasterer; Mr. Webb, slater.

Abingdon.—Since the last vestry meeting as to the restoration of St. Helen's Church, Mr. W. Wilkinson, of Oxford, and Mr. Scott, of London, the architects selected for the purpose, have examined the tower and spire of the church, and each having furnished a report to the committee, a vestry meeting was called for the 13th instant, to consider these reports, to direct measures for the re-building or repair of the tower and steeple, and to provide the necessary funds for the same. Mr. Wilkinson, in his report, expressed his belief that it is possible to repair the tower and spire, and in doing so, proposes to shore up the east wall, the inner archway and weak portions of the south wall, and other parts where necessary; to build two new buttresses on the east side of the tower; to shore up the south wall above the inner archway, and to construct a new entrance of smaller size than the present one; to build on the south aisle of the church two other buttresses; to construct of oak timber a trussed framework, and to fix it at the weakest part of the tower; to insert iron tie-rods on the east and west sides; put iron pins through the wall and bolt them; and do certain works (not of any great magnitude) to the spire. Mr. Wilkinson advises the committee to obtain tenders for the supply of various articles, such as timber for shoring and scaffolding, oak timber for the framing, stone, Portland cement, iron rods and nuts, and for the supply of masons, carpenters, and labourers at per *diem*, and that an efficient practical clerk of works, who has carried out works of a similar kind, should be appointed. Mr. Scott, in his report, alludes to the principal defects to be remedied, as "the overhanging towards the east and south, the crushing, cracking, and disintegration of many parts of the walling, and the crushing of the arch opening into the church." He explains the following courses which would be adopted to save the tower:—The erection of a thorough system of shoring on east and west sides, a considerable addition to the existing buttresses on the east side, the reparation of the shattered walling, the replacing of the cracked portions in other parts of the tower, the renewal of the shattered stonework of the southern arch, the reconstruction in a great measure of the staircase, and the substitution of better iron ties for the existing ones. With certain requisites named, Mr. Scott is of opinion that the restoration of the tower is practicable, and recommends it. After the reports had been read, the chairman stated that the committee had ascertained the probable amount of the cost of repairing and restoring, and also the probable cost of rebuilding, and the following was the result:—To repair and restore the tower and spire—Mr. Scott's estimate, nearly 1,000*l.*; Mr. Wilkinson's, 680*l.*; To rebuild—Mr. Scott's estimate, 2,000*l.* to 2,500*l.*; Mr. Wilkinson's, 1,811*l.* 5*s.* He further stated that the committee had had an interview with Mr. Wilkinson, and afterwards unanimously agreed to advise the vestry to adopt Mr. Wilkinson's plan for the repair and restoration, and to engage him as the architect; and further, to recommend a rate of 1*s.* in the pound (which would realize about 450*l.*), and that a voluntary subscription should be opened towards the cost of the works, &c. Mr. Wilkinson's report and plan were unanimously adopted. The question as to the ways and means was not quite so quickly disposed of, but was also at length agreed to.

Worcester.—The cemetery report of the general health committee, read recently at the council meeting, stated that the plans for the cemetery had been approved by the bishop and the secretary of state, and that after twice advertising for tenders, four had been received, the lowest of which was so much above the estimate of Mr. Clarke, the architect, that the committee had consulted with that gentleman as to a modification of his plans, so as to reduce the expenditure. Mr. Clarke, however, thought that no change could be made which would occasion any considerable saving, while at the same time it would damage the general effect of the buildings. He therefore strongly recommended that the plan should be carried out in its entirety, and expressed his belief that the total cost of all the works of the cemetery would not exceed 7,000*l.* The committee consequently supported Mr. Clarke's view, and urged the council to have the entire plan carried out according to the lowest tender — namely, that of Messrs. Chambers and Hylton for 4,830*l.* 14*s.* 6*d.* After some discussion, the adoption of the report and of Messrs. Chambers and Hylton's tender was agreed to unanimously.——The extensive works for the partial restoration of Worcester Cathedral, are in rapid progress. The southern portion of the eastern transept was fearfully cracked and warped by the lapse of ages, and the windows defaced by the introduction of bad tracery belonging to a later period. The southern wall and buttresses of this transept have recently been taken down and rebuilt, and the ancient windows restored free from the anomalous tracery. The main feature of the renovations in progress lies at the east end of the cathedral. The buttresses properly belonging to the edifice have now been rendered perpendicular and nearly rebuilt, and an Early English window will fill up the end of the cathedral in place of the Decorated one which had supplanted the ancient work. The flying buttresses at the angles were removed as soon as the angle buttresses properly forming part of the edifice were strengthened sufficiently to ensure proper resistance to the thrust of the groining of the roof and the other arches. In removing one of these flying buttresses, according to the *Chronicle*, from which we quote, a piece of china was found imbedded in the masonry. This is regarded as itself a proof that their erection took place at a comparatively modern date. The new east window will contain ten lights disposed in two tiers of five, each divided by a gallery. The lights in both tiers decrease in width, and those of the upper tier in height also, from the centre outwards, and by this arrangement a variety is obtained in the various members of the window. The lights are divided by piers, ornamented by slender shafts, which, rising from the bottom of the window, cross the gallery and terminate in moulded capitals, surmounted by the mouldings of the arches. The hollows of some of the mouldings are filled in with the tooth ornament. There are said to be proofs that the ancient window was of five lights, and Mr. Perkins has constructed the window in accordance, as to details, with the remains of Early English east of the tower. In the interior the window exhibits clustered columns of stone, with detached shafts of polished Purbeck marble, and these support combinations of deeply cut mouldings forming the heads of the lights. The lights, it is hoped, will ultimately be filled with stained glass. The long lancet windows on each side the chancel of the Lady Chapel are also to be taken out and restored. The Dean and Chapter, in restoring the interior walls of the choir and Lady Chapel, have caused the whitewash to be removed, and the polished faces of the marble columns to be exposed. The workmen have also restored the decayed portions of the walls, columns, and masonry generally, of the choir and Lady Chapel. Extensive renovations at the west front were completed some months ago. These consisted chiefly of the erection of new buttresses to restrain the tendency of the nave to fall westwards, the rebuilding of the gable, in which an arch has been introduced for the purpose of allowing the removal of the window when the funds of the Dean and Chapter permit, the mullions and portions of the tracery being in a very dilapidated condition, though this is not readily perceptible. Among the recent improvements may be noticed the masonry of the Adelaide and the Wheeler memorial windows, and the introduction of three triplet lancet windows, in the clerestory on the south side of the choir. Amongst the contemplated restorations, it is intended to ornament the angles of the north central transept with pinnacles. The contractors are Messrs. Bennett, of Birmingham. Divine service is at present performed in the nave.

Cardiff.—Tenders have been received for the proposed new Jewish Synagogue, at East-terrace, Cardiff; Mr. H. J. Paull, architect; ranging from Bourne, 456*l.* to Edwards, 416*l.* Quantities supplied.

Harborne.—The foundation stone of the intended Church of St. John the Baptist, in Harborne, was laid on the 14th inst. by the Rev. Chancellor Law. The style is Geometrical. The edifice will consist of nave, north and south aisles, chancel, and sacristy, and a bell turret at the south-west angle of the nave. The principal entrance will be in the centre of the west front: there will also be another entrance on the south side. The length of the nave will be 80 feet by 25 feet width, and the height 45 feet to the ridge of the roof: the aisles will be nearly the same length as the nave by 13 feet wide. The roof will be of open timber framing, ceiled between the rafters, which, together with the seats and other wood-work, will be stained and varnished. The nave will be separated from the aisles on each side by arcades of five arches. The pillars and arches both to nave and chancel will be worked in Bath stone. The passages and chancel will be paved with tiles. The west window and the chancel east window will both be of five lights, filled with tracery: the aisle windows will be of two lights each, with simple trefoiling in the heads. Externally the walls will be of white brick, with Bath stone dressings. The church will accommodate 650 adults and 150 children, and one-half of the kneelings will be free.

MALVERN.

It may perhaps enable some of the younger readers of the *Builder*, who chance to visit Malvern, to view with greater interest and profit the abbey or priory church of that place, if I attempt shortly to indicate the points which struck me as most worthy of attention in a recent examination of that structure.

In the interior are brought together, without any of the intermediate links which connect them, the extremes of that Mediæval architecture whose rise, development, and decline spread over some centuries. The supports of the pier-arches which divide the area from the west to the crossing into three aisles, are those huge cylindrical masses of masonry, supposed by some to date from the pre-Norman era. The abacus, a square stone, with the lower edge plain chamfered, follows the plan of the pier: the moulding below it is a quarter round, with small circular tore beneath. The bases, if they exist, are concealed by the elevation of the floor; the arches round, of three orders of square-edged members. The space of wall between the pier-arches and the bottom of the clerestory windows—enough for a triforium stage, had this feature entered into the builder's design—is left blank, with somewhat unpleasing effect.

Of the windows, of rigidly late Perpendicular character, I will say a word hereafter.

The covering of the central aisle is a flat ceiling, divided into small squares by wooden moulded ribs, altogether poor and ineffective. The alternate transverse ribs are returned downwards upon the wall, until stopped by sculptured brackets placed upon the point of each window, and between the pairs. The spandril spaces, obtained by the addition of a curved brace, are pierced into Perpendicular lined panelling. The four arches of the crossing, pointed, lofty, and rising until they intersect the vaulting, are composed of circular fillets and hollows, not retiring within and behind each other in the usual way, but upon the same plane,—an arrangement quite destructive of the richness and depth of the compound arch. The hollows are filled in with panelling, and all the members of the arch are brought down the sides in that unbroken continuity as characteristic, perhaps, of Perpendicular as of French Flamboyant. Below these main arches are constructed, to the north and south, subsidiary ones, the space of wall between them, which is considerable, being relieved by panelling. The last-named arches, by a barbarous contrivance of modern date, are closed by a gallery of pews, completely shutting out of view the arms of the transept. The pier-arches of the choir, three in number, have, like those described, their characteristic continuous mouldings, for I do not consider the propriety of this expression violated by the *quasi* octagon abacus-mould and plain cap, which encircle the mouldings on the line of impost. As in the part of the church west of the crossing, so in the choir, the space of wall between the pier arches and the clerestory windows is considerable, but here it is relieved by its decorative panelling. The absence of a string course of any sort throughout the building struck me as a very obvious defect. The erection of a massive semi-circular wall, 10 or 12 feet high, for an inconceivable purpose, serves at once to curtail the choir of its proportions, and utterly to destroy the effect of the large window, which, if exposed fully to view, would form a very noble termination to the eastward. The north side, too, is closed up by a wooden screen, of the Perpendicular period, which, though beautiful in design, and delicate in execution (the crowning string, or cornice, a band of admirably cut vine leaves and fruit), I, for one, should not object to see removed. The west end has not been much better treated, for there a wooden organ-loft blocks up in part the window; so that it must be allowed much perverse ingenuity has

been too successfully employed in marring the beauties of this really fine edifice.

The stone vaulting of the crossing is groined and ribbed, in rather a complex manner; that of the central aisle of the choir, a flat ceiling like the one before described, though the presence of vaulting shafts, formed by the prolongation of the external mouldings of the clerestory window arch to the ground, would seem to indicate that a regular groined roof once existed, or was contemplated: the roof of the choir-aisles consists of eight-celled compartments, produced by the transverse, diagonals, and longitudinal ridge ribs, and a rib from point of pier-arch to point of aisle window.

There is some good Perpendicular panelling in various parts of the church. Besides that already mentioned, this mural decoration is employed on each side of the clerestory windows of the choir; in the space between the summit of these windows and the intersection of the vaulting with the wall; and at the foot of the windows of the choir aisle, and of the great eastern window. The last named appears to me the most perfect example;—the head of each compartment formed into an ogee arch trefoliated, then the upper foil trefoliated again, and the lateral foils bifoliated, an instance of which has been termed *double foliation*, or *double feathering*: two small ogee arches, also trefoliated, under a transom, correspond to each of the upper ones.

A large part of the floor of the north transept, and of the upper end of the choir is formed of encaustic tiles, and there are others scattered in smaller quantities about the church. On the south side of the choir is an elaborate marble tomb, raised to one Lane, "Knight, servant of Henry VIII." and his lady. These personages are represented in effigy, in a recumbent posture, and at the head of the tomb is a kneeling figure with uplifted hands, in the attitude of prayer. I suppose this monument not to be earlier than the reign of Elizabeth. The execution is very good, and the preservation complete. In the north transept are two ancient stone tombs, one of them quite defaced; the other surmounted by the effigy of a warrior in chain armour, I presume, of the close of the twelfth, or commencement of the succeeding century.

The windows of the nave are of three lights, those of the choir aisles of four, of the transepts of six; the west window of seven, and the east of eight, all formed on the same principle, which, I think, may easily be rendered intelligible by a description of the last named. The central mullion splits near the top, and divides the window archway into two secondary arches; each of these, in turn, subdivided into four lights, with ogee-arched heads, on a level with the springing of the window arch; from the points of the ogees vertical lines are carried upwards to the circumscribing arch, and the mullions separating the four lights are in like manner prolonged. All the perpendicular lines above the ogees are curved at top and bottom into little arches, and the interstitial spaces thus obtained are trefoliated. A transom divides the secondary arches at about half their height, and below this is another line of diminutive trefoliated ogee arches. Below the main transom bar, which divides the window into two stories, the series of ogee-headed lights is repeated. I wish to direct attention to the abundant use which is made in this church, both in windows and panelling, of *cinq-foliation*, in contradistinction to trefoliation: the former is almost exclusively used in the later periods of Pointed architecture in our own country, whilst in France its employment is quite exceptional. There is some good contemporaneous stained glass in the eastern window, and in those of the choir aisles. The modern glass in the western portion of the church offers a deplorable contrast both in colour and in design, the latter consisting, strangely enough, of armorial bearings and heraldic devices, surely somewhat misplaced in an ecclesiastical edifice.

The windows, outside, have plain dripstones, continued as a string over the sides and faces of the buttresses. The broad, shallow, straggling hollow of the declining period of Pointed architecture forms the main feature of their mouldings. There appears no attempt to ornament the buttresses: their set-offs are united by plain slopes, and they run up into square shafts set diagonally with finialled and crocketed pinnacles. The parapets are various, but all of the battlemented form; some solid, some pierced into vertical lined panels, and another portion formed of two stages of similar panelling, the upper being placed at equal intervals, to form the merlins of the battlement. The central tower is well proportioned, of two stories above the roof; the belfry stage, consisting of a two-light window in each face, crowned with conoidal-shaped canopies, with concave sides, finialled and crocketed. The parapet is pierced, and there are open angular turrets.

There is no entrance now into the church but by the projecting square porch at the north-west end, a good example of the Perpendicular period, of as pronounced a character as the rest of the building. The stone vaulting of the interior is elaborately groined and ribbed, the front overlaid with panelling, and from the middle of the upper story projects a canopy, and corbel pedestal for a statue.

The old Priory Gate-house, adjacent to the church, is worthy to be noticed. One side of it is in very excellent preservation, the whole surface covered with panelling, with quatrefoliated circles enclosing shields, and lighted by a very graceful little oriel window in the upper story.

These, I believe, are the only antiquities of which Malvern can boast. VIATOR.

HALIFAX.

THE inauguration of the people's park, the costly gift of Mr. F. Crossley, M.P. took place on the 14th inst. On that day, the formal presentation of the new park to the corporation was made. It is situated on the western side of the borough. It has four entrances, two in Park-road, one in Hopwood-lane, and one in King's Cross-street, and the whole is surrounded by palisades. The promenade is reached by means of flights of stone steps. In the centre of the terrace is a semicircle of steps, nine in number, and 27 feet in width. At the top of these steps a stone building is erected, 30 feet high, with arches in front, borne on pillars of stone. On each side of the building will be small fountains, and Grecian vases on pedestals. In different parts of the terrace are productions of marble statuary, of life size, eight in number, the work of Italian artists, representing Hercules, Venus at the Bath, Aristides, &c. Below the terrace is a stone basin, 4 feet in depth, and 216 feet in circumference, with a fountain in the centre. Lower down is a little lake, with a serpentine walk about it, and bridges over it,—one formed out of rocks. These sheets of water will hereafter be tenanted by aquatic birds of various kinds.

At the south or south-east side of the grounds, baths are to be erected by the corporation. The external part of the building is to be elaborately decorated, at an estimated cost of 1,500*l.* by public subscription, the rest to be built by corporation rates.

The park grounds, which are laid out with trees, shrubs, plants, and flowers, comprise in all 7 acres and 25 perches of grass; 1 acre, 3 roods, and 20 perches of walks; 2 roods and 9 perches of water; and 2 acres 2 roods laid, and 1 perch of plantations,—in all about 12½ acres, suitably studded with numerous seats for the use of visitors.

The following particulars as to the Congregational Church lately erected at Halifax have been in type for several weeks:—

The opening of the new Congregational Church, at Square, Halifax, took place on the 15th ult. It is regarded as "a miniature cathedral," and has been upwards of two years in process of erection. It adjoins and is in lieu of Square Chapel. Hitherto the most notable dissenting chapel of this kind in the West Riding of Yorkshire has been a Unitarian chapel, at Leeds. The new edifice at Halifax comprises a nave, transepts, tower, spire, and cloisters. The architect, Mr. Joseph James, of London, has adopted a treatment of the interior to suit the object for which the building is designed. The period of architecture selected is that of the fourteenth century. The form of the edifice is that of a nave, with cloisters on each side, north and south transepts, with a tower and spire in the junction of the latter with the nave, and a small spirelet on the opposite side: there is a projection for the organ in place of the usual choir. The nave or body of the edifice does not occupy the western end, and the small substitute for a chancel the eastern end, the site being such as to compel the usual position to be reversed. The eastern end of the nave abuts upon Square-road, the gable rising to the height of 72 feet, surmounted by a metal cross with ears of wheat. Near the apex of the gable is a four-light window, with louvre-boards for ventilation. Below it is the great east window, 36 feet in height, of seven lights, the mullions terminating at the top in circles, with Flamboyant tracery. Underneath this window is the entrance to the seats on the ground-floor of the nave, by a recessed doorway, having a double niche on each side of the entrance, and surmounted by a small gable. The gable is flanked on each side with a broad buttress (in which are inserted the entrance doors and steps to an eastern gallery), surmounted by perforated turrets rising to the height of 80 feet, finished by crocketed pinnacles. The sides of the nave are divided into bays by broad buttresses, within which run the "cloisters,"—rather low covered passages into the transepts, entered by doors in the first bay, and lighted by broad, flat-arched windows in the other bays. The windows in the nave between each buttress are each of three lights, of almost cathedral size, the head of each being filled in with varied geometric and Flamboyant tracery. The ends of the transepts have on the ground stage three single-light windows, and in the gables wheel-windows about 16 feet in diameter, filled in with tracery, the latter lighting the galleries and the former the seats below the galleries, in the transepts. The western projection, containing the organ, has also windows in the ground-stage, intended to light the vestry, the organ being first designed to stand in a gallery above. But as the organ has now been placed on the ground, the windows are filled with slate; but an upper window in the western gable is seen over the organ. There is an entrance both to the floor of the nave and south transept, and by a staircase to the gallery of the latter, in the first stage of the tower, with which also the south cloister communicates. The tower and spire which were built by private subscription (understood to be from the Messrs. Crossley), mount up to about 235 feet, including the vane. A pierced battlement surmounts the tower; and the springing of the octagonal spire from this base has been hidden by crocketed pinnacles at each angle. The spire itself is a bowed one, though at a distance this peculiarity cannot be observed. It is crocketed at the angles, and on the cardinal faces is broken into stages by lucerne-lights. Within, the architect has been obliged to make the pulpit the main object. The nave is 95 feet long by 45 feet broad, and 45 feet high, with transept on each side of the eastern end of the nave 28 feet wide. Two aisles, each 6 feet 6 inches wide, and flagged with stone, run up the nave, and afford ingress and egress to low-backed oak pews on either hand. The seats in the transepts stand at right angles to those in the nave; and the space between the transepts is occupied by the pulpit upon a raised dais, surrounded by a light oaken railing. The pulpit is of Caen stone. Immediately behind it stands the organ, the recess in which it stands being separated from the nave by a large arch, equivalent to the chancel arch of an ordinary church. In order to secure the required acoustical properties of the building the architect has adopted a five-sided panelled ceiling; the whole of which has been coloured and emblazoned, under the architect's designs, by Mr. Haley, decorator, &c. Bradford. All the windows are filled with quarried glass, with a sparing use of deep colours in the traceried heads (the glass being supplied by Mr. N. W. Lovers, of London). In the evenings the building will be lighted by three sun-lights in the roof, the pulpit, organ, and seats under the transept-galleries having separate gaslights. Accommodation is provided for 1,040 adults and 200 children. The building has been erected by Messrs. J. and W. Brauland, of Bradford, under Mr. J. Dilworth, clerk of the works, and its cost will be about 15,000*l.*

PROVINCIAL NEWS.

Chelmsford.—The opening of the new school at Southchurch, according to the *Chelmsford Chronicle*, took place on the 4th inst. The new buildings are situated on the south side of the high road to Southend, a little eastward of the parish church of Southchurch. They are from the designs, and have been executed under the superintendence, of Mr. William Slater, of London. There is a teacher's residence of six rooms, and a school-room, 33 feet by 17 feet, with an open cradled roof, ceiled to the ridge. The style of the whole is "Middle Pointed." The walls are built of grey stone, and are roofed with dark-coloured tiles. The appearance of the buildings, both as to form and colour, is plain, but relieved by gabled windows of a lighter-coloured stone on the north side of the school-room, and by a triplet at the east end. Together with the restoration in the parish church of a large south porch of carved woodwork, designed by the same architect, the works were contracted for by Messrs. Carter, of Rochford; Mr. Garrard, also of Rochford, undertaking the carpenters' work.

Banbury.—The whole of the contracts for the waterworks are now taken;—for the reservoir and engine-house, by Messrs. Davis and Sons, Banbury; steam-engine and pumps, Mr. C. Lampitt, Neithrop; filter-beds and pipe-laying, Mr. J. Aird, London; sluice-cocks and hydrants, Messrs. Guest and Chrimes, Rotherham; supply of mains, the Butterley Company, Alfreton, Derbyshire. Some of the tenders are necessarily upon schedules of prices, on unascertained quantities.

Maidstone.—The following tenders were received for the new buildings to be erected at the Red Lion-corner, High-street and Week-street, Maidstone:—

Laurence and Son, London	£3,940	0	0
Patrick, London	3,895	0	0
Fisher, Reigate	3,867	0	0
Sutton and Walter, Maidstone...	3,392	0	0
Sutton and Vaughan, Maidstone	3,387	0	0
Tompson, Maidstone (accepted)	3,353	10	0

Preston.—The boys' schools of St. Ignatius (R.C.) have been completed by Mr. John Walker and Mr. Henry Butcher, the contractors. The buildings are

plain. They consist of a boys' school-room, 61 feet by 36 feet, and 21 feet high; a class-room, 25 feet by 21 feet, and 15 feet high; and an infants' school, 42 feet by 21 feet, and 15 feet high; lighted by about 300 feet of skylight.

STAINED GLASS.

Dover.—On the recommendation of the committee of the local council, formed for the restoration of the Mason Dieu-hall, it has been resolved that the council subscribe 100*l.* towards the alterations consequent upon the restoration of the western window. This window is to be restored by Mr. J. Bell, in memory of the late William Kingsford, of the Mason Dieu House: it is to be composed of coloured glass, from a design already prepared.

Wellington (Somerset).—Mr. John Toms, who put up a stained-glass window in the parish church here about six months since, has just completed and fixed two others in the same church. No. 1—window, contains four principal lights, with tracery in the head. Two lights are filled with the figures of SS. James and Andrew, under canopies, with backgrounds of diapered ruby: underneath each figure is placed the saint's emblem. The other two side-lights are of a grisaille ground, enriched with coloured foliage and flowers: it is a memorial window erected by Mrs. Ireland, of this place, to her deceased parents.

No. 2, is a window of three principal compartments, with tracery lights. The general groundwork is a grisaille of lily pattern,—the centre light bearing the figure of the Virgin and Infant Saviour, on a rich diapered background of gold colour: the lily is also introduced as the emblem. This window has been presented to the church by the parishioners. Both are placed in the north aisle.

NEW ZEALAND.

The following extract, from a journal kept during my voyage recently made from New Zealand to England, may probably interest some of your readers.

(1857.) I was struck, whilst in New Zealand, with the extraordinary width and height of some trees, willows especially, which had been planted only a very few years; and this rapid growth, with strength of vegetation peculiar to its soil, must be attributed to its temperate and agreeable climate. The Maories, as a further illustration of the climate, will raise two crops of potatoes in a year, without manure; a crop sometimes coming to maturity in fourteen weeks. Almost all our English fruits and vegetables are suited to the antipodes, and grow to perfection. Fern land, which is plentiful, when sown with English grasses produces excellent pasture. There are forests of lofty trees, which are in flower and in leaf nearly the whole of the year. The light and pensile foliage of the blue and red gum-trees is particularly admired. Flax grows wild, and in large quantities: it has a beautiful silky appearance, and is of superior quality. It would repay cultivation, and in this light it has recently been considered by the Government, which has offered prizes to the producers of the best specimens. Mats and baskets are made of this flax, closely woven: it is a good substitute for cord, and is used in a variety of ways. Some of the native trees, though, perhaps, not so gigantic as those of Van Diemen's Land, are very beautiful and valuable for building, and for spars: the pine (*kauri*), for instance, is unequalled for that purpose, and the Admiralty has imported large cargoes of it. It is an interesting sight the ceremony of rolling down from their native heights to the beach, whence they are shipped, these valuable timbers. The striking of axes, the song and dance, the chief's signal for a number of labourers to roll the huge spar down the steep, amid the shoutings of many voices, form a scene never to be forgotten.

Nature has indeed favoured this country. The flowers of an island where so many Englishmen have fixed their homes are abundant, charming the eye with all their varieties: many which here would require the protection of glass, grow there in the open air. The noble aloe flourishes, and might be planted, as it is in Italy, for a fence; still it is to be much admired as a central ornament in a circular flower-bed. The golden gorze cheers the eye wherever we travel: the sweet-briar, roses of several sorts, honeysuckle, hawthorn, and acacias of many colours, intermingle in the hedges, and decorate and diffuse their delicious perfumes over the fields, the gardens, and road-sides. Perhaps there is no country in the world that will equal New Zealand for its scenery, climate, and productiveness. How lovely and sweet a fine day is *there*, when it is cheerfully sunny and not too hot, cannot well be imagined by those who have never resided at the antipodes. I find the opinions of every traveller, deduced after long observation, confirming the remark. Mr. Swainson, the naturalist, Mr. Hursthouse, and others, all speak the same of its advantages in these respects.

Botanists, I believe, have pretty well explored the flora of New Zealand: they have introduced plants into this country, and acquainted us with many which, unknown in Europe, are found only in New Zealand. Quantities of iron-sand, carried down by the torrents, make it probable that there is iron-ore in the interior part of the country: manganese I myself picked up in digging, and gold has been discovered. We coursed along some of the finest harbours of the world.

Water is scarce in some places: one sees at the present day the poor fetching it from a stream in some gully, often a long distance from their homes. In other places where there are wells, the water is abundant. As a proof of the mildness of the winter, in June, which corresponds to our December, the mercury has not fallen below 48 degrees.

The roads in this colony—where anything approaching to roads exists—are constructed with soil and small stones, with bundles of a small shrub as an under-stratum: the surface is covered with *scoriæ*, or the lava of the volcanic mountains. This is a road that would not be approved of by a McAdam or a Patteson. But everything bears strongly the characteristics of a new country. There are some pleasing villas in the outskirts of Auckland, well built, and situated in romantic positions, commanding a view of the country around and the harbour of the city. The city itself has at present nothing that can gratify the eye of the architect. Even the new Government House is so poor, and so out of the pale of fine architecture, notwithstanding its glaring white compo front, that it is little calculated to elevate the public taste. Certainly, something more ought and could have been done by the provisional government to have secured better artists and a better building. However, we must remember that this is a new country, and not expect to find in its architecture and public works evidence of any very high degree of civilization. F. L.

THE NEW-ROAD.

In Mr. Pinks's article bearing the above heading, which appeared in your paper, he says, p. 453, there is "a clause in the original Act for making the road prohibiting the erection of any building within 50 feet of it. * * * The lapse of a century, however, seems to have materially modified this penal enactment, *for numerous are the instances in which the 50-feet plot is built upon.*"

If, then, the houses must be brought nearer to the footpaths, why not throw back the paths to the houses? This would leave the roadway sufficiently wide for a double line of rails to be placed in its centre. The same course might be adopted with respect to the City-road, which would give us a continuous railway from Old-street, or perhaps Finsbury-square, to the Edgeware-road.

Of course we should find as many persons ready for an outcry against this proposal as there were in the Duke of Bedford's day to oppose the formation of the road itself; but this does not affect the question of the advisability or the practicability of my suggestion. A railroad, or even a tramroad, would be a greater boon to us in 1856 than the New-road was to our grandsires in 1756. E. P.

PRACTICAL REMARKS ON DOMES.

The articles in your journal of late treating of domes, and lastly of the necessity of large rooms, with what has been said of the new reading-room at the British Museum and the dome of St. Paul's at various times, seem to imply a difficulty of construction, whereas it is not, but practicable to erect a building covered with a dome *larger* than any hitherto built in the known world. This may be done with brick and cement, stone, or terra-cotta, to have a lantern-light or a cupola on it—not as at St. Paul's, where there is a conical stone erection to support the cupola built within a *timber* dome. Theatres, concert or town halls, museums, lecture-rooms, churches, chapels, &c. may be so built fireproof that timber need only be used to a limited extent for fittings and doors, and upon such a plan that there may be numerous staircases, refreshment-rooms, with cloak-rooms for ladies and gentlemen (distinct), offices, &c. as may be required.

The ground plan may be a square, octagon, circular, or formed by eight right angles, the latter making the most uniform abutment, if the dome is so large as to require it.

In my humble opinion as a practical man, there is scope for the development of this noble feature, and its adaptation to fireproof building of stores, factories, &c. need not be more expensive than ordinary construction, as a vast space may be covered with a dome springing a few feet from the ground, for utility and economy, with strength and great durability.

A building of octagon plan, about 220 feet diameter outside the walls, including usually necessary offices, rooms, &c. will seat 10,000 persons so as to see on the stage, platform, or pulpit, and not be liable to real or false alarms of danger incident to all the present places of amusement or worship, as of late at Covent Garden Theatre and Surrey Gardens.

The strength of a dome would be tried in its building, as no fixed centre should be used, but a revolving one, to give the form only.

Jas. Pulham.

EXHIBITION OF THE ART-UNION OF LONDON PRIZES.

The pictures selected by the prizeholders of the past year are exhibited in the Suffolk-street Galleries to the subscribers and their friends, by tickets, which, moreover, may readily be obtained by any who will apply at the office, 444, Strand. After the 31st, the Exhibition will be open to the public without tickets for a week, as usual. The Exhibition consists of 152 pictures and water-colour drawings, together with a roomful of the bronzes, medals, statuettes, drawings, and other works of art which have been produced by the Society, and which, admittedly, have given great impulse to the production of similar works out of doors, to supersede the puerilities which filled the shop-windows a dozen years ago. We have already mentioned the principal pictures purchased by the prizeholders, so that it is unnecessary now to go into detail; but we may point out as amongst the best in the collection, No. 2, "Leith-hill," by G. Cole; 12, "Harvest Repast," by F. Underhill; 16, "Shades of Evening," by H. J. Boddington; 59, "A Family Group," by H. B. Willis; 85, "The Druids' Circle," by H. W. B. Davis; "Falstaff proposing to marry Dame Quickly," by D. W. Deane; 107, "Crossing the Brook," by I. Henzell, &c. Some of the water-colour drawings are admirable specimens. The prizeholders next year should bear in mind that the operations of the Art-Union of London have had the effect, in conjunction with other more recent agencies, in creating so many picture-buyers, that it is desirable to make their selections the moment they obtain the right to do so.

SANITARY GOVERNMENT.

On an application being made by the Government authorities to the vestry of Lambeth, to put a stop to the pestilential effluvia which not only trouble our members of Parliament, but also some thousands of other persons, the Board, in answer, declined to undertake the expense and trouble of prosecution; and, in consequence, the unfortunate dwellers in the neighbourhood are under the necessity of bearing their unpleasant condition until Sir Benjamin Hall can get a fresh Act of Parliament passed for the purpose of compelling the parish authorities to do their duty.

These unpleasant circumstances give rise to several important considerations: the first is surprise and vexation that it should be found necessary at the present day to use force to compel a body of gentlemen, in whose care the health and well-being of a large district is intrusted, to do an evident duty. It has often been to us a matter of pain to note the "penny-wise-and-pound-foolish" policy of several of the metropolitan parish boards in sanitary matters. This course of practice is not only injurious to large masses of the people, but must if persisted in lead to a change in the parochial management of this great population.

In the City, and some other districts where sanitary inspection has been made a matter of police, it is surprising to notice the progress which has been made, and how well with their at present limited authority the officers who have come under our notice have fulfilled their somewhat difficult duties.

It would be unjust to make these remarks without at the same time mentioning that in the poorer districts the parish authorities are awkwardly circumstanced. A large number of those who are called upon to pay the heavy poor and other rates are themselves struggling for an existence. Considerable tracts of property which in the present state of things it is necessary to occupy as dwellings are so dilapidated and saddled with ground-rent, that the present holders can ill afford out of the small profits of the fourth-rate cottage kind of household property to carry out the proper drainage and other improvements which may be required.

We have heard the authorities of London parishes say—"If we enforce all those sanitary measures, we shall not only be driving many who contribute towards the rates to another place, but also will so much raise them, that we shall make paupers of several who are barely able to pay the present amount." Such an argument as this is well worthy of careful thought, and when we look round the wide extent of the metropolis, and find that in some parishes, where there are few needy housekeepers and tradesmen, the parish rates are not more than 4d. or 5d. in the pound, we see others in which the greatest amount of

poverty exist, and where the most vigorous sanitary exertions are required, pay 2s. in the pound and upwards.

Experience shows that this uneven local taxation of our great city is pregnant with numerous evils, which are at present so palpable and increasing, that a remedy must be speedily applied.

Granting all this, it will be found that proper care for the health of parishes will, in the long run, be found a saving in money, without taking into account matters of a higher consequence; and it should be carefully borne in mind now, when London and its suburbs are so much above the average as to health, that in those places which at the last cholera attack were found so ill provided, but which since then have been greatly improved, we find the greatest comparative decrease in the usual number of deaths, and this should encourage all to increased exertions.

It is unfortunately the case that in times of comparative safety some are apt to lapse in their exertions, and view with but little consideration the exertions of those who, mindful of what is likely to come, will not put off using proper exertions until the evil is upon us and all is terror and confusion.

THE GENIUS OF TURNER.

Comparatively the art of landscape painting is of very recent introduction. The Egyptians, Greeks, and Romans, notwithstanding their skill in architecture, sculpture, and painted representations of the human figure, and of inferior animals, seem to have overlooked the other fair forms of nature, and not considered them worthy of imitation.

In the foreign schools Claude Lorraine, Poussin, Salvator Rosa, Rembrandt, Rubens, and a few others, may be said to have been the first who, with skill and a proper amount of truth, represented landscape scenery. At home, amongst the most eminent dead painters, are Richard Wilson, Gainsborough, Constable, and Turner; all of whom, possessed of high artistic ability, are very varied in style. In considering the merits of the artists above named, it may be worth while to glance slightly at the characteristics of some of them.

In Salvator Rosa's pictures we find a wild combination of human and other figures with landscape, but we seldom in this artist's works see much variety of feeling: wild, grand, and gloomy are the landscapes which have come from this pencil. Rubens's landscapes are very much like coloured photography; see, for instance, the view of his château, preserved in the National Gallery. How different is the treatment of that view from the bold and magical arrangement of his historical pieces. If an unknown artist of the present day were to send such a landscape as that by Rembrandt of "Tobit and the Fish" to the Royal Academy exhibition, it is doubtful if it would find a place even in the highest row. There are, however, some other landscapes by this artist; for instance, the light and dark views of the "Windmill," which are wonders in their way.

Claude Lorraine is all sweetness and calm; in looking at his pictures you fancy that you can hear the soft sound of minstrelsy, the feet-fall of the dancers, the gurgling of the water, and even the touch of the falling leaves. The famous Claude has not, however, essayed to paint the blasts before the thunder-storm—the storm itself—the flitting glimpses of sunshine and rain—or the fierce contentions of the seas and rocks.

In the landscape pictures by Poussin, fine in broad and transparent depths of shadow, and most beautifully and boldly manipulated in all parts,—descending angels and other allegorical representations mar and destroy the illusion of the scenes according to our present ideas.

In our school, in looking at the works of Richard Wilson, it is impossible not to recognise the poetical conception and the grandeur of many of them. They are, however, not transcripts of nature.

Some of Gainsborough's are sweet and faithful; but he has not attempted very lofty flights. Constable's pictures are boldly-chosen points of English scenery—cornfields, locks, distant views of towns and hills,—over which are often rainbows and showers.

In Turner's pictures we have a combination of the best qualities of many painters. In some he conveys to us the soft and still feeling of Claude; in others, the wild and poetic fancies of Salvator Rosa. Moreover, in many of the works of Turner there is a sentiment shown in the introduction of the figures which conveys the mind to circumstances connected with the spot, but which do not, like the allegorical introductions of Poussin, destroy the harmony of the scenes. For instance, in his drawing of the spot on which Harold the Saxon is supposed to have died at the battle of Hastings, he has introduced a couple of greyhounds in pursuit of a hare, and so fagged is poor puss, that we feel certain the dogs will worry her upon the spot where the king is said to have died. Then, how wonderful, yet fit, is his treatment of Stonehenge,—that mysterious circle! We have seen nothing in painting which conveys so fine a notion of a war of the elements as do the thunder clouds and lightning which hover over and fly about the huge stones. In the foreground the shepherd and part of his flock have been stricken; not the least touching part of this incident is a little lamb attempting to suckle its dead dam. Equally fine is Turner's treatment of the Land's-End, in Cornwall;—how the waves dash about, and the birds whirl in the mist, and how mysteriously the distant sea mixes with the clouds! Compare this with the quiet, luxurious view at Ivybridge. In looking at the first, we fancy that the painter must have been reared amidst wilds and storms; and at the last it is difficult to think that the mind which conceived, and the hand which executed this sweet picture, could have skill in anything unconnected with green leaves and singing birds.

How different, however, are these from the magnificent pictures of "The Rise and Fall of Carthage," "The Vale of Tempe," and other subjects of the highest class. In thinking of this great painter, picture after picture crowds upon the mind: the battered war-ship towed to its last berth by the little steamer, the whole lighted by the setting sun; the view of Plymouth with many groups in the foreground; the fine pictures of Oxford; the still and truly English scene at Bolton Abbey; the view from near Bristol: in this a schoolboy has fastened his kite in the branches of a tree,—might the painter have thought of Chatterton's flight and tangled end when he introduced this? It would, however, take many pages to enumerate Turner's varied works. The purpose of the writer is, however, merely to direct attention to the numerous works of this great painter, in order that they may contrast his productions with the landscape-painters who have gone before, and note how great he is.

An Artist.

THE SURREY SIDE OF THE METROPOLIS.

Prompted by reading your remarks on "The Insanitary State of the Houses of Parliament," in respect of the nauseous and pernicious trades carried on in Lambeth, I am induced to offer a few remarks and suggestions in furtherance, and for the general improvement of the metropolis. As there are two sides to a question, so are there to our river Thames, but this fact seems hitherto not to have been known, or duly considered. London, in its metropolitan sense and locality, lies, in fact, on both sides of the river, but improvement has been confined to one. West, north, and east, the metropolis has been of late years vastly improved, but the south has been wholly neglected: why should this be? The increased and increasing value of land and houses on the north side of the river is in strange contrast with that of the south: and again I say, why should that be?

The deteriorated properties in the Waterloo-road, Stamford-street, and surrounding localities, prove the strange contrast, yet might be made far more valuable and creditable to the metropolis by the Government turning some slight share of its attention in that direction. For instance, there stands the magnificent structure Waterloo-bridge: at the north foot is the elaborate and ornamental Somerset House, recently so much improved, and rendering the approach to the bridge so perfect; but on the Surrey side what is there to balance the eligibility? Absolutely nothing; or worse than nothing! Yet there is an ample space to let of ground belonging in freehold to the Duchy of Cornwall. Public offices are wanted—Somerset House is gorged with them,—why not build some auxiliary offices on the Surrey side, of a style of architecture corresponding with Somerset House, and completing the magnificence of the bridge? "Lancaster-place" is sufficiently met on the Surrey side by "Tillotson-place," and it is on the eastern foot of the bridge that defect exists. If the move once took place as suggested, and the improved opening from Stamford-street to the Borough was perfected, the north side of London would be soon greatly relieved of overcrowding by some of the business houses and professionals availing themselves of the cheaper and more central locality thus offered to them in improved availability; for the South-Western and South-Eastern lines of railway would equally be convenient. We are stretching across the Atlantic: France and Ireland are as nothing to us in the way of distance; and yet Lambeth, and the Surrey side,—"Transpontine," as it is sarcastically called,—is tabooed as an outlandish place!

I seriously suggest, Sir, through the effective medium of your pages, that London should not be further extended either west, north, or east, but that Government should direct all extension and improvement southwards, even to the foot of the Surrey Hills, as now on the north to Highgate and Hampstead,—for the metropolis would then be concentrated more into a radius, and rendered more convenient for intercommunication.

The Prince of Wales has a great personal interest in this suggestion, which would render *his* "Duchy of Cornwall" more integrally, respectably, and profitably a portion of the great metropolis of the world, known throughout the earth by the high name of "London."

W—'d Wykes.

THE MEDIÆVAL SOCIETY.

The object of the society which is being organized under this title is the collection of copies of works of art of all kinds executed during the Middle Ages, but especially of those executed before the end of the thirteenth century; "and this not as counteracting the independent influence of our own time upon its own art, but with the view of promoting the study of the Mediæval period as the highest and purest of former times." The collection would consist of—

Casts of sculpture, especially of the French and Italian schools.

Copies of tracings of frescoes and other wall paintings.

Copies and casts of works in metal.

Rubbings of brasses and copies or tracings of stained glass.

Notes of schemes of decoration in sculpture, painting, and glass, carried out in the Middle Ages, with a view to leading to the more careful treatment of its story in modern sculpture, &c.

Books bearing upon the various branches of art and upon costume, &c.

Photographs, and especially of any sculpture threatened with restoration.

A wardrobe of costumes, or authenticated reproductions of said costumes, for the use of painters, and

Specimens of Eastern textile fabrics, and of ceramic art.

Amongst the regulations it is set forth that the committee are "to exercise great care in the selection of objects to be admitted into their Museum; taking pains to exclude all works of inferior art, and to obtain, purchase, or receive such only as in their opinion are of really good character." Further, the committee are "to be prohibited from receiving any ancient objects of art taken from their proper and original position, with a view to forming a collection of antiquities. The collection of illuminated MSS. pictures, ivories, coins, or seals, vestments, furniture, or movables, would not be open to this objection, but portions of ancient sculpture, painting on walls, or the like, to be scrupulously rejected, as the object of the society is in no sense antiquarian, and one of its leading principles will always be the preservation of ancient art with the most jealous care in its original locality."

Without the slightest desire to impede or discourage the gentlemen who have associated themselves to form this society, the accomplishment of their views would seem to lie so completely within the province of the established "Architectural Museum," that we would much rather see them using their energies and influence to enlarge the scope and increase the usefulness of the existing society than forming a new one. We hold the same opinion with respect to the Archæological Societies. The dissipation of forces and the multiplication of expenses are to be regretted.

SCHMIDT'S ORGANS: ST. PAUL'S CATHEDRAL.

I was glad to see lately in the *Builder*, the mild castigation of one who had termed St. Paul's organ an "outrageous" instrument; with the very suspicious addition, that some other large organ would be soon purchaseable. The assertion, that "Father Schmidt" was not a known or eminent organ-builder, was somewhat overmuch. I believe he was invited over to England after the "Great Fire;" and common sense will dictate that a maker of "no mark" or *prestige* could hardly have jumped into such extensive employment. Perhaps it was hardly known to the first of your correspondents, that besides his metropolitan labours he was engaged in distant places. There was, about thirty years ago, a small, but very sweet-toned organ, by him, in the remote cathedral of *St. David's*. The only cathedral in Wales where there is daily choral service.

The organs of St. Mary's, Oxford, and St. Paul's, Bedford, were by Schmidt: the latter, in lieu of repairs, was substituted about fifteen years ago by a modern mediocre one. But one of his best works out of London may have been at *Trinity College, Cambridge*—the swell being afterwards added by *Green*, and the pedal-pipes by *Avery*.

Is it correct, as reported to me by a tourist, that the organ in *St. Patrick's*, Dublin, was taken from the Spanish Armada? The same thing is reported, positively, of a clock, with outside "jacks"—like

Old "St. Dunstan's," and Carfax, Oxford; also, of an inlaid communion-table at Rye, Sussex. The organ at Trinity College, Cambridge, has its bellows worked by a *wheel*—isolated from the organ: the two at St. Paul's are in a low apartment under the organ-loft, leaving the lower part of the case free—mainly, I think, for "pedal" pipes.

I never saw an allusion to a notice, either in the *Spectator* or *Guardian*, that "Mr. Renatus Harris," Schmidt's rival, who built St. Andrew's, Holborn, organ, "had an ambition to erect an organ *over the west door* of St. Paul's Cathedral, to exceed anything of the kind yet known."

Having began with "St. Paul's," allow me to express a "national" regret, knowing that foreigners, as well as natives, visit it, that "more is not made" of it in the way of handsomeness and decoration. The half-consecrated inscription to Sir Christopher Wren—"*Si monumentum requiris*," &c.—has been banished, somewhere, in pieces; and a thing which, if endurable, should be temporary—covered with rusty red cloth—occupies its place. Will no one advocate the restoration of Sir C. Wren's "monument" in his principal work? The east end has been a little improved; and the communion-cloth has some old gold fringe. The "well-worn" one of the pulpit never had: curtains and other things have been "dipped" till they are "no colour," handsome replacement not having been preferred.

The *musical services* have, for a considerable time past, done much credit to all concerned; rendering any other deficiencies regrettable. CRITO.

RUINOUS BUILDINGS, METROPOLIS.

AT Marlborough-street, on the 15th, a great deal of time was devoted by Mr. Beadon to the hearing of summonses served on the owners or occupiers of dilapidated or highly ruinous buildings in the district of this court.

It was contended by a professional gentleman (understood to be surveyor to the Marquis of Salisbury) who appeared for the owner of the property, No. 5, Cranbourn-passage, that the authorities had exercised a very arbitrary power in coming on the premises and giving peremptory directions respecting them, which had put his client to considerable expense, and that unnecessarily. It was stated that the intention had been to take down the dangerous part, but they had now been called upon to shore up a portion, and thus increase the expense, and that there was no occasion for this. He was of opinion that the magistrate's time was very unnecessarily occupied by summonses for such cases as the one in question.

Mr. Beadon said he was quite of another opinion. A very salutary Act of Parliament had been properly put into operation, and was being carried out with judicious effect in the matter of old and dilapidated premises dangerous to the public. Time occupied in the investigation of these cases could not be unnecessarily bestowed. The owner or occupier was personally liable, and where neither could be readily found, it was required by the Act simply to affix a notice on the door of the dangerous premises complained of.

Ordered to be put in proper repair, or taken down within fourteen days.

NOTES UPON IRON.

(*From our Correspondent at Wolverhampton.*)

THE past week has witnessed an improved demand for iron. The orders have come chiefly from the United States and our South American account. With the United States there is now more activity, because of the nearness of the period at which the "fall" trade must cease. The orders have been kept back so long that there does not remain sufficient time before they must be executed for the making of all the iron needed in the American market.

The home demand is tolerably good, but inquiries are for comparatively small quantities; and no very large demand is expected from America after the "fall" trade has been supplied. But very few calculations to be relied on can be made in relation to the future of the American market.

The Indian disturbances are not checking very much the trade with India in respect of the railways in progress there, as tenders have been asked for within the past day or two for best South Staffordshire iron for such uses.

The prices that were determined should rule the "trade" throughout the quarter do not appear to be by any means adhered to by all the members of that combination. We have heard that prices ranging from 5*s.* to 30*s.* below that scale have been accepted by such houses. There is now too much competition in the manufacture of iron to permit of the reverse of this being the rule. If the "fall" trade of America should not be followed by an equally good general demand from the States, it is more than likely that this variation in prices will be so marked at the time of the next preliminary meeting, that a determination to lower prices in council will be come to. At the same time there are some few houses in the trade who have acquired so fair a name as to secure a constant demand at the "trade" rates.

At Wolverhampton, on Wednesday, and at Birmingham yesterday (Thursday), pigs were offered largely, without, however, any very marked anxiety to press sales.

EXPENDITURE BY MIDDLESEX MAGISTRATES.

MR. EDITOR,—At a recent special meeting of the Middlesex magistrates, the following resolution,—"That the plans which were laid before the court on the 16th July instant, for altering and enlarging the County Lunatic Asylum at Colney Hatch, be approved, and that the same be carried into execution, at an expense not exceeding 70,000*l.*" was carried by a large majority. These gentlemen deal with thousands with the greatest coolness; but is it always with equal wisdom? May we not inquire what is now going to be done, and under whose direction the 70,000*l.* are to be spent? If I remember rightly, this was about the sum specified for the total expenditure when designs for the building were first sought by public competition. A STRUGGLING RATE-PAYER.

TASTE.

THE man whose mind has been prepared by study and cultivation for receiving the impressions of works of genius, *ought* to possess taste in proportion to his knowledge of and habit of contemplating beautiful objects. The mind naturally takes its tone and complexion from objects which it habitually contemplates. We should never forget the ancient advice: *Diligently contemplate excellent things.* The mind becomes like them. On this principle the Greeks, whom we mention from their precedence to other nations in these matters, made a practice of educating the eye of the public by presenting it with the most refined productions of their favourite artists: where they collected in largest numbers, there the choicest specimens of art stood ranged before them.

A public monument is as useful in promoting the taste when it is beautiful, as it is certain to corrupt it, when it is not so.—*Emeric David.*

A public monument of bad taste, erected in a time when there existed skilful artists, is an injury done to the nation and to the age which witnessed its erection; a permanent object of shame.—*Vasari.*

It is wrong to say, as some have, that taste is a faculty of mind distinct from the imagination and the judgment; but it is plainly the result of the joint exertion of these two powers. Elegant taste is nothing else than sensibility, directed by good sense. If taste, then, be the effect of the imagination (upon which sensibility depends), and of the judgment (on which good sense depends) taken together, it will be asked how far the judgment ought to interpose in regulating the power of imagination, or of correcting its exuberances, in order to produce good taste.—*Dalzel*—"*Lectures.*"

It is taste which, according to the different degrees of perfection in which it is possessed, distinguishes nations that are improved from those that are barbarous, and which in the same country renders one man superior to another.

We may form a sufficient notion of the taste of any nation, in any country, and at any period, by the state of its architecture.

Prescott, in his "History of the Conquest of Peru," writes:—"The monuments of China, of Hindostan, and of Central America, are all indicative of an immature period, in which the imagination has not been disciplined by study, and which therefore, in its best results, betrays only the ill-regulated aspirations after the beautiful that belong to a semi-civilised people.

The Peruvian architecture, bearing also the general characteristics of an imperfect state of refinement, had still its peculiar character, and so uniform was that character, that the edifices throughout the country seem to have been all cast in the same mould.

The architecture of the Incas is characterized by simplicity, symmetry, and solidity. It may seem unphilosophical to condemn the peculiar fashion of a nation as indicating want of taste, because its standard of taste differs from our own; yet there is an incongruity in the composition of the Peruvian buildings, which argues a very imperfect acquaintance with the first principles of architecture. While they put together their bulky masses of porphyry and granite with the nicest art, they were incapable of mortising their timbers, and in their ignorance of iron, knew no better way of holding the timbers together than tying them with thongs. In the same incongruous spirit, the building that was thatched with straw and unilluminated by a window, was glowing with tapestries of gold and stone! These are the inconsistencies of a rude people, among whom the arts are but partially developed. It might not be difficult to find examples of like inconsistency in the architecture and domestic arrangements of our Anglo-Saxon, and, at a still later period, of our Norman ancestors.

Yet the buildings of the Incas were accommodated to the character of the climate, and were well fitted to resist those terrible convulsions which belong to the land of the volcanoes."

But of course the displeasure that arises from such incongruities is attributable to circumstances, to want of resources, and may not be the fault of those engaged in them.

I have witnessed in Australia and New Zealand similar absurdities and deficiencies to those mentioned by Prescott, in Peru. In the colonies it is a very common thing for every man to be his own architect: his materials consisting only of shingles. Nothing great can be expected of him; but had he genius, he would dignify even them. One of the class I speak of—for he might be a returned convict,—scarcely ever beheld beauty, has no perception of it, and is altogether destitute of taste: he is wealthy now, and the owner of a house, and he has bedaubed gaudy colours upon it—red balls of stone on blue pier-gates; and the passer-by smiles at the vain attempt of the uncultivated man to excite admiration. F. L.

THE AIR-SYPHON VENTILATOR.

THE author of a paper read before the Statistical Society of Manchester (March 15th, 1856) says:—"I have little faith in scientific ventilation, so called, whether the downward mode, the upward mode, or the circular mode,"—a view of the subject which I cannot adopt. The writer feels, on the contrary, that the non-success and disappointments hitherto incidental to apparently well-designed structural arrangements have arisen rather from *want* than from redundancy of sciential basis and coaptation. Instances, indeed, are constantly coming before us, which plainly show, with regard to pneumatic phenomena, in connection with ventilation, that although much is well known, there is still something that is either not generally understood, or, if understood, not recognised and acted upon.

A mistaken supposition appears to have been heretofore hastily taken up, that the effects obtained by the use of a bent tube or air-syphon, in the processes of ventilation, were attributed to the bend itself; but according to the specification, as well, indeed, as to other descriptions given by the patentee, the invention is stated to consist "of applying a principle which he has found to prevail in the atmosphere; or, in other words, of the practical appropriation or employment of "operations constantly taking place in the atmosphere."

It appears to be only in accordance with a rational view of the subject that as certain changes and movements do take place in the extremely sensitive and mobile atmosphere, even under the slightest thermometrical or hygrometrical changes of its condition, different from those that take place under similar variations in less sensitive and less mobile fluids, as water, it would be neither philosophical nor logical to deny that in two such tubes, one being immersed in water, the other in atmospheric air, and all other things being equal, the contents of the latter might be liable to movements dependent upon its elastic and mobile qualities; while the less active contents of the former may remain, practically speaking, still.

The different methods of artificial ventilation known as the plenum and the vacuum system, whether produced by the agency of heat, or of mechanical power, are devised and applied as if atmospheric air existed under exactly the same relations to these forces as water; in other words, as if the former were as insensitive and inactive a body as the latter,—notwithstanding that the one is an inelastic body, retaining practically the same volume at all temperatures, between the freezing and the boiling points, and the other an extremely elastic body, changing its volume and its place with every variation of heat or of humidity; and although, moreover, the one body is homogeneous, the other heterogeneous, consisting of air and vapour, the latter of which being lighter than air, is constantly rising through the atmosphere to its higher regions.

It is certain that atmospheric air besides obeying, like water, certain forces, whether impulsive or tractive, possesses and exercises inherent qualities which have not hitherto been sufficiently taken into account in practical ventilation.

Those points which appear to deserve more of the attention of architects, embrace, indeed, considerations relating to the susceptibilities and the actions of atmospheric air, under influences to which they must be more or less liable, from natural causes, in chambers, or houses, or other buildings.

This raises the question whether our domestic and other buildings can, under the operations of natural

laws *only*, be brought to a state which renders them capable of re-acting on the atmosphere in such a way as to bring its inherent elasticity and activity into operation.

Is the atmosphere of a house, for example (and I will assume that it is a house with the doors and windows closed, to exclude the impulse of winds, and what is called the plenum agency, and without any source of artificial heat, in order to exclude also the vacuum agency), in exactly the same quiescent condition as the water in a ship, or (if it were possible), in such a house at the bottom of a lake, or of a calm sea?

Supposing a ship or a house, thus filled and surrounded by water, to be liable to the same natural accessions of terrestrial heat as a similar ship or house filled and surrounded by atmospheric air on the surface of the earth would be, can we undertake to deny, considering the different relations existing between heat and water, and heat and atmospheric air, that there are at least *prima facie* reasons for suspending our opinion before we pronounce that the air would not under such accessions of heat be brought into the exercise of certain movements consequent upon expansion and diminished specific gravity, which water at similar temperatures does not exercise. We scarcely need ask whether the atmosphere within a house, being subject to influences which that out of doors is not subject to, is liable to acquire a higher temperature from natural causes than the external air.

If we take, as an example, a piece of ground not built upon—an open common—and a similar piece, say adjoining, but with a house or other building upon it, the terrestrial heat given out by the uncovered space of ground would be at once radiated into space and lost, while that given out by the ground covered by a building would be communicated by radiation, conduction, &c. to all parts of the house itself, and would be accumulated, in fact, to be again given out to the contained air; thus becoming, quite independently of artificial causes, an agent capable of disturbing the equilibrium between the internal and the external atmosphere, and causing inevitable movements to take place.

If we still further suppose the building to be divided into apartments, then some would be so situated as to receive more, others less, of the heat: the warmer chambers or rooms would act upon the atmospheres of the less warm, and the larger would act upon the atmospheres of the smaller.

From these spontaneous influences, and we may say actions, the flues cannot be free; indeed a house, even when totally free from artificial heat, is still a pneumatic instrument, in which a regular series of movements take place in this or that direction, accordingly as the atmosphere in the different parts may vary in temperature and in humidity, and by consequence in specific gravity.

Without further pursuing this interesting subject at this moment, allow me to add that we should rather *foster* than *repress* the association of science with our architectural designs, in regard to ventilation, as well as in regard to the other great and useful objects which are dependent for their fulfilment upon the architect's skill; and especially encourage the study of phenomena which help to a better understanding of the true susceptibilities and tendencies of our atmosphere, and of the seeming capricious powers by which, in our dwellings, it eludes authority, and appears to obey irregular and almost mysterious impulses, to go when we say come, to come when we say go, to be subtle in will, and intractible in practice. E. R.

ARCHITECTURAL "FOLLIES."

It would be easy to discover various efforts of human labour, not only in literature, but in various departments of art, that merit the title of "Follies." Are there not piles upon piles of books on the shelves of the British Museum, and elsewhere, so eccentric in the choice of subject, so totally useless to mankind, past or present,—so extensive and elaborate, that at times we have looked with wonder and dismay upon specimens of these large and unmeaning tomes, and classed them among the follies of humanity? The Follies which have been perpetrated on canvass, and in the more enduring marble, are also numerous: examples will suggest themselves to many: we need not therefore enter into particulars.

In architecture many singular devices have been reared to a substantial form, and well deserve the name of a Folly. The Chinese bridges and temples of George III.'s days were follies, and the placing the colossal equestrian statue of the Duke of Wellington on the top of its present pedestal, was an undoubted architectural Folly. So was the Pavilion at Brighton; and also the never-to-be-forgotten monument once at King's-cross.

In our modern cemeteries innumerable Follies meet the eye, and which, instead of creating awe and reverence for the grave, and hallowed feelings for the departed, raise up notions of pity and contempt for the taste which there gaudily and inappropriately decks the tomb.

In wandering in London streets, it is scarcely possible to perform a half-hour's journey without having the sight offended by objects which should be written down with those matters above recorded. Many of them are, however, devoted to such useful purposes that they must be looked at with some consideration.

Richly as they deserve it, the things we have alluded to have not received the title of Follies from the general voice of the public, as have those erections which it is our present object more particularly to mention.

In many parts of England may be noticed what seem the ruins of some ancient castle boldly surmounting a picturesque eminence, and on inquiring—hoping to gather the particulars of "old world" events—all feelings of romance or poetry are destroyed by the information—"Oh, that's Jones's Folly," or it may be, "that's Brown's Folly," or "Cook's Folly." Many have sketched some of these Follies in the belief of their antiquity, and have been as much disgusted as was Jonathan Oldbuck at old Bluegown's revelations. Some Follies are called after the name of the place on which they are erected—such as Byker Folly.

Not long since a well-intentioned friend mentioned the discovery which he had made, in the eastern part of London, of an ancient house with Tudor windows and other quaint and peculiar features. Without much loss of time, we proceeded in search of a vestige of the old metropolis which seemingly had escaped our careful search; but lo! on reaching the spot, we found that it was a Folly, and known as such by every man, woman, and child in the neighbourhood.

It must be acknowledged that many of the Follies are picturesque, but at the same time it must not be forgotten that the greater part of them are "shams," and known to be such by those who assisted in building them. It would have been better to have spent the money in building schools and cottages: in such a case the labourer would have felt that he was bestowing his handiwork on matters of utility. We have but glanced at this subject, but it is one worthy of thought.

J. B. A. LASSUS, ARCHITECT.

M. Alfred Dorcel, a friend of the deceased, has given a memoir of the life of M. Lassus, the restorer of some of the finest structures of France. He is represented as one of easy access, of a naturally kind disposition of heart, and of an amenity of temper even when he had to command. With him and his assistants, in the execution of the different monuments he erected, he lived on the footing of mutual respect and perfect goodwill.

Jean Baptiste Adolphe Lassus was born in Paris, and entered the Academy of Arts in 1828, when the so-called Romantic contest raged fiercest in art and literature. The paintings of E. Delacroix, and the sculptures of David D'Angers, electrified also the young architect. One of the *élèves de Rome*, a quality of great weight with French artists, H. Labrouste, had greatly scathed the Academy by sending in a drawing of the Greek Doric temple of Neptune at Pæstum; and thus, by scorning Roman architecture so near at his hands, appealed directly to the great Hellenic prototypes. For this the Academy never pardoned Labrouste, not even up to this day, but he had a satisfaction that the artists of young France saw therein the light of brighter days. Thus three of them, Greterin, Toudouze, and Lassus (all now dead), offered to the bold innovator to open an *atelier* of their own. Lassus began then the study of French architectural monuments. In 1833 he first exhibited the plans of the Tuilleries, such as they have risen out of the brains of Philibert Delorme. From this time he turned his entire attention to the edifices of the Pointed style, and sought to apply it as much as possible to religious edifices.

In 1835 he made a design for the restoration of the Ste. Chapelle. Up to 1837 he was engaged with the refectory of the priory of St. Martin des Champs, now the library of the Conservatoire des Arts et Métiers; when he was nominated, conjointly with his friend M. Greterin, architect of the church of St. Severin. He added to the western façade of this church the gate of St. Pierre-aux-Bœufs. In 1838 he presided over the restoration of St. Germain l'Auxerrois, first under M. Gadde, who has left behind him the *triste* fame of mutilator of almost all the churches of Paris; then he acted independently. "It was then," says M. Docel, "that we saw the restoration of the altars, the lattice-work, and the stalls really inspired by models of the Middle Ages; it was then we began to paint on the walls of churches and chapels either legendary tales connected with the history and tradition of the structure, or ornaments and decorations—an expedient resorted to now over the whole of Europe. It was also for St. Germain l'Auxerrois that was made the first '*vitrail légendaire*,' after patterns of the thirteenth century. In 1843 M. Lassus attained the goal at which every great mind aims,—to get rid of every extraneous fetter, and to work out his own conceptions. He became the architect of the church of St. Nicolas, at Nantes. M. Lassus died on the 11th July, 1857, at Vichy, where he had gone for the benefit of his health.

RECENT BUILDING PATENTS.*

Nicolaus Charles Szerelmey, Bermuda-place, Bath-road, Queen's-road, Peckham.—*Preparing Combinations of Materials for rendering Walls and other Structures waterproof.* Dated 2nd January, 1857.—The improved "Greek cements" are produced in the following manner:—The patentee takes about twelve gallons water, two gallons blood, twenty-five pounds ground bricks, twelve and a half pounds of powdered copper slag, twelve and a half pounds of powdered iron slag, sixteen pounds and a half of argillaceous earth, and six and a quarter pounds of gaseous matter produced from milk. These matters are boiled together for about two hours, and this is called compound or preparation No. 1. In order to prepare another or second preparation or compound, the following matters are employed:—About ten pounds of gas or coal tar, or sometimes in place thereof linseed oil, at other times, rosin or asphalte, about six and a half pounds of hydraulic lime, six and a half pounds of grit, six and a half pounds of calcined flint. These matters are boiled together in a suitable iron pot for about three hours: they are then, by means of an iron ladle, transferred to a second iron pot in such manner that the air may come freely in contact, and after the mixture has been allowed to cool, it is again boiled until it spontaneously bursts into combustion, and after it has burned for a very short time the fire is extinguished by means of a close-fitting cover. This combination or preparation is called No. 2. These cements, though they may be capable of separate use, are preferred to be employed in succession on the wall or other structure.

Thomas Holmes, Pendleton, Lancashire.—*Consumption of Smoke in furnaces or fireplaces.* Dated 6th January, 1857.—The patentee mixes with the fuels a certain quantity of a neutral or acid salt of an alkali, such as common salt. Every hundred weight of coals is mixed with three pounds and a half of salt. He also sometimes uses in the same manner mixtures of one or more of the above neutral or acid salts of the alkalies with lime, or substances containing lime, or baryta, or magnesia.

Charles Cook, Mount-street, Grosvenor-square.—*Apparatus for generating Draughts in Chimneys, and for other purposes.* Dated 6th January, 1857.—This apparatus is to be affixed to a chimney, or it may be applied in a skylight, or at the exit of any flue or channel in communication with the chamber to be ventilated. In all cases it must be exposed to the action of the wind. It consists of a kind of fan or series of blades placed in a cam or cylinder forming the top of the chimney. To produce the rotation of the fan, the inventor places a fan wheel on the top of the spindle, which wheel is exposed to the action of the wind. He curves or inclines these blades so that the one side presented to the action of the wind is hollow, and readily catches the wind, while the back part of another blade presented in the same direction on the opposite side of the spindle is so disposed as to throw off the wind.—*Not proceeded with.*

James Harris, Hanwell, Middlesex.—*An Improved Lock, and Method of acting upon Lock-Bolts, Latches, Taps, and Valves, Railway and other Signals, Bells, and other like Apparatus.* Dated 8th January, 1857.—This invention consists in the method of employing compressed air in apparatus constructed as follows, and for the purposes explained:—The apparatus consists of two cylinders with air-tight pistons and valves, or of corrugated elastic air-tight cylinders secured at the ends to wood and other material, and made to expand or close after the manner of a concertina or bellows; or of elastic air-tight spheres or spherical-ended cylinders worked by semi-spherical pistons. The connections from one part of the apparatus to the other are made by means of metal or other pipes. He also employs proof or test signals which indicate to the operator that the object is effected. The invention also consists in an improved lock adapted to be worked by his apparatus, and in carrying out this part of his invention a cylinder is placed in the lock furnished with an air-tight piston attached to the bolt. At the back of the piston is a powerful spring for forcing the bolt forward, and thereby effecting the locking, and when the bolt is forced forward by the spring, a tumbler working in a cylinder with a piston, with or without a diaphragm

* Selected from lists in the *Engineer* journal.

at bottom, falls into a notch in the bolt, keeping it in position as in an ordinary lock. A second tumbler is also provided with a catch to hold the bolt back against the spring when unlocked. The other part of the apparatus connected with the lock consists of a small air-pump, placed, say, in a bed-room above, or in any other convenient place, the distance being of no consequence. There is also at the air-pump end of the lock an alarm acted on either by the elastic cylinder or the piston of the pump. The same apparatus may be used much simplified, that is, with a cylinder and spring only for latches of gates and doors. The opening and shutting of valves and cocks, and the working of signals and other apparatus, may be effected by similar means. This invention is adapted to house, factory, and other signals. The same apparatus, with the addition of self-acting equilibrium valves, and of catches, levers, and springs, may be applied for effecting the ringing of ordinary bells, or striking once upon a bell.

Alexander M'Donald, Aberdeen. — *Manufacture of Columns, Pilasters, and other similar Structures, of Granite, Marbles, Porphyry, Jasper, Serpentine, Sienite, and other Stones, capable of receiving a high Polish.* Dated 8th January, 1857.—The improvements relate to means by which, when such structures have to be formed of several pieces of such material, each part may be more correctly worked in relation to the others during formation, so that when the parts are ultimately fixed in position, they may appear as one solid mass, or as nearly so as possible. The several pieces or blocks to compose the finished structure, as, for instance, a column, are temporarily secured together by a rod or rods passed through a hole or holes in the series, aided by nuts and screws or other suitable means, after they are dressed or partially so. After they are finished in the dressing they are then polished on a turning-lathe or otherwise on the surface as the case may require. The joinings of the different pieces in contact are made accurate one to the other, by having a saw or other suitable instrument inserted between them for some little distance towards the centre. When the polishing or other finishing of the outer surface is completed, and the parts are separated for transit, the ends of the separate blocks are to be dressed down at least to the level of the saw or other cut just referred to, when the parts will be ready for being put up.

Louis Julien Brethon, Tours, France.— *Machinery for Manufacturing Draining Pipes, Bricks, Tiles, and other similar Plastic Articles.* Dated 10th January, 1857.—This improved machine is applied to the manufacture of solid or of perforated bricks, of tiles and draining pipes, and other articles made of clay having a regular cross section. A strong vertical cast-iron screw revolving freely in the middle of an upright cast-iron cylinder, a rotative motion is given to the helix, either by horse or steam power, and the clay is thrown with a shovel into the upper box of the cylinder as it is dug out from the ground without any other preparation than that of being mixed with water: it is ground, mingled, malaxated, and freed from hard or filamentous substances, and finally the clay is forced down through the side moulding apertures for producing either pipes, bricks, tiles, or other articles of that description.

John Francis Porter, Park-street, Westminster. —*Manufacture of Bricks and other Articles of Clay and Brick-earth, or of the like Materials.* Dated 10th January, 1857.—The first part of this invention consists in improvements in the preparation of clay for making bricks and other articles. These improvements have reference to a pug-mill described in a specification of letters patent, dated the 31st day of January, 1855. The second part of the invention consists of apparatus for moulding bricks and other articles, by which apparatus the material used in the formation of such articles is moulded at less cost from all descriptions of clay, and better effected in respect of the inferior kinds of clay, that is, the less plastic sorts of clay. The patentee performs the moulding of the bricks as follows:—The clay is delivered in any suitable manner to the machine, or from a pug-mill, in the ordinary way, through an opening of any convenient size or form, and is received on and by a series of rollers covered with a porous fabric, some or even all of which are caused to revolve, in order to compress or roll out the clay, or to mould the same into the required form. The bricks or other articles are then divided by cutting wires disposed in the usual way.

Edward Loos, Leicester-square, London.—*Manufacture of Cement, Mortar, Concrete, and artificial Stone.* Dated 20th December, 1856.—The patentee manufactures Roman mortar of different qualities, with a certain proportion of lime and a chemically calculated quantity of moderately fine sand, and powdered substances of a silicious, argillaceous, aluminous, alkaline, coagulative, and colouring nature, as well as natural and artificial sulphates and carbonates, as may be required. For certain more massive constructions he unites his process with the ancient system of Roman building. He forms a double pavement, or encasing of bricks or other suitable stones, or of any artificial Roman stone, and adds any rubbish mortar in this encasing, regularly building each layer. The artificial stone is manufactured from the above described cement.

James Robertson Dick. Alnwick, Northumberland.—*Window Sashes.* Dated 23rd December, 1856.—This invention, which has for its object to improve the form and construction of window-sashes, with the view to obviate the present dangerous inconveniences attendant upon the painting, glazing, cleaning, or otherwise of windows from the outside, consists in the sides or outer portions of the sash frames being formed in two parts, and bolted or locked together so as to slide within the window-frame attached to the cords and weights in the ordinary manner, and admit of the sash being easily separated when required, and lowered into the room without its removal from the frame or beading, each side of the sash being provided with a catch and pivot for uniting the same to the sliding portions thereof, and maintaining it in a vertical position with the window-frame. The invention cannot be fully described without reference to the drawings.

William Player Miles, Patent Lock Factory, near the Forest-hill Station, Surrey.—*Locks and Fastenings.* (A communication.) Dated 11th December, 1856.—In order to ensure greater security in respect to locks and fastenings, the parts in this invention are so arranged that a piece of paper, or of card, or of other material, may be introduced over the keyhole, and under a cover or plate of one face or side of the lock or fastening. The piece of card, or of paper, or of other material so introduced, has formed in it an opening or passage for a bolt or instrument to pass through it, and such bolt also passes through corresponding openings in the case of the lock or fastening, so that when the bolt or instrument has been introduced, and is locked or fastened by a spring catch or holding instrument, the keyhole cannot be got at without destroying or defacing the piece of card, or of other material covering the keyhole, as the covering material cannot be removed without unlocking or unfastening the bolt or instrument which is passed through the covering material, and such bolt or holding instrument cannot be withdrawn without being unlocked or released by the introduction of the key. The covering material may also be rendered still more secure by having its under surface marked or written on it, and it may be further rendered secure by having a seal form on its outer surface. By these means a lock or fastening cannot be opened without detection, whether by the use of a false key or by the proper key.

Henry Wimball, Aldermaston, Berks.—*Apparatus for the Manufacture of Bricks, Tiles, Pipes, and other articles of a similar nature.* Dated 12th December, 1856.—This invention relates to a peculiar construction, arrangement, and combination of mechanism employed in the manufacture or production of bricks, tiles, and other similar articles, and consists in the application and use of a moveable carriage or platform, or a series of such carriages linked together, and caused to pass under or in connection with a pug mill, or other brick-making machine of that class, so that the exuding stream of clay or other plastic material is carried away from the machine by a continuous self-acting operation, the motion of the clay itself imparting the requisite traverse to the carriages, in place of such clay being removed by hand, or by an endless chain or set of rollers, as is at present the case in machines of this class now used.

Books Received.

VARIORUM.

Mr. Charles R. Weld, the author of several pleasant and instructive vacation tours, has just produced a new one titled "Vacations in Ireland" (Longman and Co., publishers), in which the wild and still very little travelled districts in the west of our sister isle are sketched with a light and flowing pen, but interspersed with fewer archæological memoranda than might have adorned and added interest to the author's sketches. We can add the testimony of our own pleasant personal reminiscences to those of Mr. Weld in respect to the districts visited, which the tourist will find to be full of interesting objects. The curious superstitions of the peasantry are not overlooked; nor are their hospitality, their humour, and their primitive simplicity. Fishing is a favourite and oft-recurring subject of notification with the author, as it doubtless will be with many tourists who follow in his footsteps; but still, after all, as we have said, we should have been additionally pleased with the book under notice, had a little more space been given to the many curious and interesting architectural remains with which Ireland is studded.——In a couple of tracts titled "Dishonesty exposed: Report on Experiments made on board H.M.S. Impericuse, in June 1856, with Prideaux's self-closing furnace valve-door, and the common door," and "Treatment of an Inventor by the Admiralty, an instructive narrative for Englishmen, particularly for those who are shareholders in steam ships," Mr. T. S. Prideaux shows, in a graphic and descriptive way, how the engineering officials of the Admiralty manage "not to do it." Without reference to the particular merits of Mr. Prideaux's invention, one can have little hesitation in coming to the conclusion, that unless his narrative be positively and wilfully false—which we have not the slightest reason to suspect it to be—there are officials in the Admiralty who do anything rather than their duty, either to their paymasters, the public, or their superiors at the Admiralty; and who ought not to be allowed either to "do it" or "not to do it" except for the shortest possible time. The trickery, falsehood, and injustice here positively charged against them ought to be investigated, and an example made either of those who were guilty of such malpractices, or of those who accuse them of such conduct.——In "Metropolitan Workhouses and their Inmates," a little tract just issued by Messrs. Longman and Co. various letters and other documents are reprinted for the purpose of supporting an endeavour to improve the administration of our poor houses, a much needed reform indeed. The precise object mainly aimed at may be gathered from the motto on the title-page, extracted from an article in the Quarterly Review for September, 1855.—"The poor-house, which is justly made distasteful to the able-bodied vagrant, should present a different aspect to those who are driven thither by no fault of their own: and the grievance we have to complain of is one which, for the sake of all concerned, should be remedied without delay." ——"Stenography, or a brief and simple System of Short-hand, by Morris Coleman" (Warr, 63, High Holborn), is a small pamphlet containing one of those many forms which experience and fancy teach the art of Stenography to assume. The basis of the present modification, like that of various others, is Taylor's, but practice alone can decide as to its special merits. There is a danger of making short-hand too short, but we do not say that is the case in the present instance. As to the best forms of alphabetical characters for current stenographic writing, we have already given a few hints of our own ideas, on a previous occasion, and need not recur to them now.

Miscellanea.

A Danubian Steam Navigation Company.—A company on limited liability principles is being formed, under highly respectable auspices, for the purpose of fully opening up, to the commercial enterprise of the west, those rich countries through which the Danube and its tributaries flow. Regular lines of screw barges or other vessels are proposed to be established by the company between Raab on the Danube, communicating by railway with Vienna, and New Becse, on the Theiss, the principal depôt of that extensive corn-growing country from which Vienna and its environs are supplied; between Raab and Semlin, where there is an immense carrying trade in pigs; between Basiash and Pesth, the line of a great coal trade; and between Kalefat and Galatz, and the Sulina bar, the line of transport for the large grain shipments to this country from Wallachia and Bulgaria, reloading at the latter places goods for transit inland. The promotion of personal intercourse by passenger traffic is also contemplated. Captain Charles G. Robinson, R.N. and F.G.S., is the marine superintendent of the new company, whose capital will be 300,000*l*, in 30,000 shares of 10*l*. each (deposit 1*l*. per share). Messrs. Barnett, Hoare and Co. are the London bankers to the new company.

Proposed Foot Bridge over Thames at Richmond.—The executive committee of the Conservative Land Society having renewed negociations for the erection of a foot-bridge across the Thames, in connection with the railway bridge, a deputation, consisting of Viscount Ingestre, M.P., Mr. Henry Pownall (members of the committee), and Mr. George Morgan (their surveyor), accompanied by Mr. H. G. Day, of Isleworth, waited by appointment, last week, on the Hon. Charles Gore, Chief Commissioner, at the office of Woods and Forests, Whitehall. Mr. Morgan prepared a plan as an outrigger to the railway bridge, access to which would be gained at the Middlesex and Surrey ends by light spiral staircases. Objection, it may be recollected, has hitherto been made on the part of the Government, that the bridge would interfere with the Crown ferry rights. The deputation having submitted the plan and urged the great public importance of the proposed work in saving the long detour, by means of Richmond Bridge, between Richmond and Isleworth, Brentford, &c., were requested to communicate further information with respect to the limits of the ferries at Richmond and Isleworth.

The Decision as to the Wellington Monument.—Sir, I trust that you will caution artists against entering into competition for the future, until they know that the artistical mind will form the majority amongst the judges: now I know the following to be a fact, as respects the Wellington Monument: That Mr. Cockerell, with his high sense of honour and modesty, told the judges, "that although he knew something of architecture, and had the credit of knowing something of sculpture, yet he felt that he was not capable to decide on such an important affair, and hoped he might be allowed to add some four or five artists of known ability to their number;" but the judges, as they imagine themselves "judges by Divine right," had no such modesty of conscience, and declined the proposition; so Mr. Cockerell, as you saw by the report, *withdrew*. Now, is not this anything but what it ought to be? and it is seen by the report, that they owu that they never took into consideration the *site* of the proposed monument or of its *locality*. Then, what was the use, as you have said, of Sir Benjamin Hall sending out lithographic plans, sections, and views of the proposed site, if that was not to be considered?—A Sculptor.

A Self-acting Safety Buffer Break.—The self-acting buffer break, patented by Mr. William Lukyn, as described by the patentee, obtains its self-acting power from the collision of the buffers, which striking each other, either on collision of the carriages or at the control of the breaksman, the breaks are brought upon every wheel throughout the line in quick succession, but not at one blow, which would render the invention useless, from the shock it would create. The breaks are connected with the buffer rod by levers and a regulating break screw which prevents the wheels becoming locked. In shunting a train, a lever is attached to the tender, which communicates with a rod and coupling links, and passing along the centre of each carriage, relieves the buffer rod from the break. In starting a train, the whole operation consists in connecting the coupling links and throwing the lever forward, so that in the event of collision, by surprise, a ecident, neglect, or carelessness, by two trains coming into collision, or any obstruction on the line, the buffers are designed to act upon each other and force the break upon the wheel of each opposing carriage throughout the line, thus greatly diminishing the effect of fatal disasters.

Public Drinking Fountains and Pumps.—We have occasionally for many years urged the necessity of providing the public in towns with drinking fountains and pumps provided with iron cups or ladles chained to the erection; and it is gratifying to observe that gradually the general want is being supplied. There are already many more of these conveniences throughout the metropolis than there were some years since, though many more are still wanted. In Liverpool, Mr. Melly, though no teetotaller, has done much towards the same end, and at some little cost to himself, and we now hear that the same benevolent gentleman is taking steps to get drinking fountains introduced into Manchester. Birkenhead and Runcorn are followng the example, and it is being urged at Preston. Several public pumps have been of late added to those at Doncaster by the Local Board of Health, and at Edinburgh the Rev. Dr. Begg has provided several with galvanized iron ladles, and Dr. W. P. Alison advises the provision of many more public drinking places, especially where closes (phonetically "closses," not clozes) abound. He also, by the way, recommends the paving of these closes with waste material from the freestone quarries at Craigleith and Hailes, and the prohibition of the rebuilding of decayed close-houses except under a fixed rule of proportioning the height of the houses to the width of the inturning footway.

Ignition of a whole Gasometer full of Gas, at St. Luke's.—An extraordinary occurrence took place during the thunder storm on Friday, the 14th inst. when Cheapside and many other portions of the metropolis were cast into utter darkness, on the one hand, while on the other the church steeples, far and wide, were lit up by the glare of an immense flame, which issued from one of the huge gasometers of the Chartered Gas Company, at their Brick-lane station in St. Luke's. An iron column of the gasometer had been struck by the lightning, and, falling, had canted it over so far as to allow the gas to escape, and at the same moment to be ignited, unaccountably, by the flash, as seems to be imagined, but more probably by some jet of burning gas near the gasometer. The occurrence has been called an explosion, but it was simply an ignition and consumption of the gas, which, in rushing out, would not be in that precise combination with the atmospheric air which is requisite to produce a true explosion, although, doubtless, the ignition would be accompanied by an immensely exaggerated noise, such as that produced in lighting any jet of gas. Singular to say, no one was injured, and nothing burnt or damaged but the gas and gasometer themselves.

Railway Traffic.—The Traffic Returns of the Railways in the United Kingdom for the week ending August 8, amounted to 527,515*l.* and for the corresponding week of 1856 to 502,338*l.* showing an increase of 25,177*l.* The gross receipts of the eight railways having their termini in the metropolis amounted to 224,659*l.*; and last year to 218,694*l* showing an increase of 5,965*l.* The increase on the Eastern Counties amounted to 2,123*l.*; Great Northern, 1,210*l.*; Great Western, 2,736*l.*; London and North-Western, 3,812*l.*; total 9,881*l.* But from this must be deducted 106*l.* decrease on London and Blackwall; 537*l.* on Brighton, and South Coast; 1,437*l.* on South-Western; and 1,836*l.* on South-Eastern; leaving the increase as above 5,965*l.* The receipts on the other lines in the United Kingdom amounted to 302 856*l.* and for the corresponding period of 1856 to 283,644*l.*; showing an increase of 19,212*l.* in the receipts of these lines.

Fresh Air in Rooms.—A correspondent, "Probe," while writing us on the hundred-times-told tale of the evils of foul air and the advantage and necessity of fresh, suggests that in the upper sash of every window there should be inserted a framed pane, that will open on hinges; and that by the Building Act this should be compulsory, because in numerous instances the upper sashes of windows are fixed, compelling people to expose themselves to the evil influence of draughts from opening the lower sashes of their windows. It would serve the same end, however, if it were compulsory on builders to hang every upper sash, so as to admit of its being opened at pleasure. The additional cost of doing so is very trifling, and every such sash ought unquestionably to be made to open.

Breakwaters and Harbours for Scotland.—In a statement of places surveyed and reported on by order of the Admiralty, with a view to the formation of breakwaters, piers, or harbours of refuge, but where the recommendations have not as yet been adopted, are the following:—Wick: Report and design by Captain Vetch, R.E. on the 10th February, 1857. Two breakwaters recommended, one from the north shore of Wick bay, and the other from the south shore, sheltering an area of sixty acres, having a depth of 12 feet and upwards, and of forty-two acres with a depth of 18 feet and upwards, at time of low water of spring tides. Period required for completion, seven years. Estimates of total cost, by Mr. John Coode, C.E. 175,175*l.* A harbour is also recommended at Peterhead, at a cost of 227,905*l.*; two breakwaters at Elie, in the Firth of Forth, at a cost of 200,000*l.*; and a breakwater at Dunbar, at a cost of 150,000*l.*

A Novelty in Brick-making.—Among the new machines lately exhibited at the Highland Agricultural Society's show was one for the novel purpose of making bricks and tiles from common earth by pressure. The patentee, Mr. G. T. P. Arthur, has spent many years and much capital in bringing it to perfection, and he undertakes, with the greatest facility, to make bricks or tiles from any description of earth, without any previous preparation, and in any weather.

Ill-constructed Law Courts.—The *Law Magazine* says,—"The legal profession has to suffer continuously from the injurious consequences of ill-constructed courts; and lawyers, at least, should interest themselves in seeing that the buildings in which they have to spend so much of their lives should be adequately adapted to the required purposes. Amongst other annoyances of the class we are alluding to, and which have to be encountered by the practitioner, we may note the absurd relative positions allotted respectively to the judge, jury, counsel, and witnesses. Many a circuit town presents in its court-house an instance of most ingenious folly in the arrangement of the above necessary parties. We have often seen learned counsel sitting in a well in the middle of the court, precluded from all means of communicating with their clients, or with each other, the witness-box being so disposed that if he who is being examined looks towards his questioner, when answering the counsel, as is inevitably the case, he then turns his back on the jury, who lose his reply." Architects, too, "should interest themselves," so that new courts may not present the same inconveniences.

Half-holiday in the Building Trades at Manchester.—The master builders of Manchester have acceded to the demand of the workpeople, and it has now become the rule, we are informed, to leave off work at one o'clock on Saturday all the year round. The weekly wages remain as before, and there is no alteration in the number of hours on other days of the week. This reduction of two hours a week in time is equivalent to an increase of wages of about one shilling per week. There will doubtless be some inconvenience to the public on the adoption of this system in the building trades in respect to calculating and charging time, but as the concession is made by the masters in deference to a public expression in favour of the holiday, it is hoped that the public will make allowance for such inconveniences as may arise.

Chambers's Institution, Scotland.—Mr. William Chambers, one of the founders and editors of *Chambers's Journal*, has purchased a large building in Peebles, his native place, to devote it to a public library, museum, and picture gallery for the benefit of the inhabitants of that town. In addition to the buildings already subsisting on the site he intends to erect a great hall, the foundation stone of which he has just laid. It has been arranged at the request of the town council of Peebles, that the ancient cross of the burgh, removed from the grounds of Sir Adam Hay, Bart., shall be placed in the centre of the quadrangle. The founder of the new institution has promised to give 10,000 volumes of general literature.

A Safety-guard Tackle-block.—A tackle-block, which holds fast all it gains, without manual holding on, or belaying, as with the common block, is advertised, we observe, in the American papers, and appears to merit some notice. It is a patented invention, and was originally called Whipple's nipper-block, but has since been improved, and is now called Ballon's safety-guard tackle-block. A lever inserted at one side works with a ratchet so as to act as a break upon the pulley wheels, and to clasp the rope. By pulling a cord or rope attached to the lever it is set free, and the weight or burden descends with ease and safety as convenience may require, or can be suspended at any height for any length of time. As the block of itself holds fast all that is gained from pull to pull, it allows the freest outlay of strength, often, it is said, enabling one man to do the work of two, and with greater ease. With such a block, too, acting under horse-power, the stopping short or giving back of the animal will cease to occasion the slightest danger. In setting masonry, and for the use of masons and stone-layers generally, as well as carpenters, and others in the building trades, such a block, if well made, must be exceedingly useful. Whether it is patented in this country we do not know. The patentee is Mr. Adin Ballou, of Hopedale, Milford, Mass. U.S.

Value of Highland Property.—The Duke of Portland has just purchased the beautiful and romantic estate of Langwell, in Caithness-shire, at a price of 90,000*l.* His grace purposes making it a summer retreat and converting part of the 40,000 acres, to which it extends, into a deer forest. The fisheries and shootings, which at present yield 750*l.* a year, are of the best description, and the property is therefore particularly desirable in a sporting point of view. As showing the value of an attractive Highland estate, it may be stated that the price amounts to about thirty years' purchase of the gross rental.

Fees, re Metropolitan Ruinous Buildings.—I am quite of the opinion of "Architect" in this matter, and feel myself and my profession to be degraded by the miserable scale of fees put forth by the Board of Works. It is a new burden upon us, inasmuch as we cannot refuse to undertake this peculiarly onerous duty; and yet if we take any of these paltry sums it must be with loss of self-respect, and with a certainty that what we take is too little to be any remuneration at all. Surely this is not the way to promote an effective execution of duty.—D. S.

Walsall National Schools Competition.—The designs submitted by Mr. H. E. Cooper, have been accepted.

Blackburn Infirmacy.—We have received a complaint that the proposed extension of time for sending in plans was not advertised in the *Builder*, although it was in the local papers, so that London architects would be led to send their designs before the required date. It is only fair to the committee to say that the advertisement appeared in our last issue, but, by accident, under the head of "Contracts," instead of *competitions*.

Dampness of Fire-proof Rooms.—A fire-proof room was formed twelve months since in the basement story. Two walls only were required: they were built in cement, and all the walls as well as floor were cemented. A jet of gas has been constantly burning. No sign of damp *appears*, yet parchment deeds, after being in the room about a week, feel damp. Query the cause and remedy.—X. Y. Z.

[The difficulty of making underground fire-proof floors dry has been discussed in our paper before. Change of air is the desideratum.]

All Saints', Poplar.—Various repairs are to be commenced forthwith at the Parish Church of All Saints', Poplar, under Messrs. Morris and Son, Architects. The following Tenders have been delivered:—

G. North	£ 419
E. J. Munn	415
Jeffrey	295
Salt	295
Derbey	290
Watts	280
Hall (accepted)	240